DIAGRAM

Showing "D," "d," "t," of Tapering-Curve Tables,

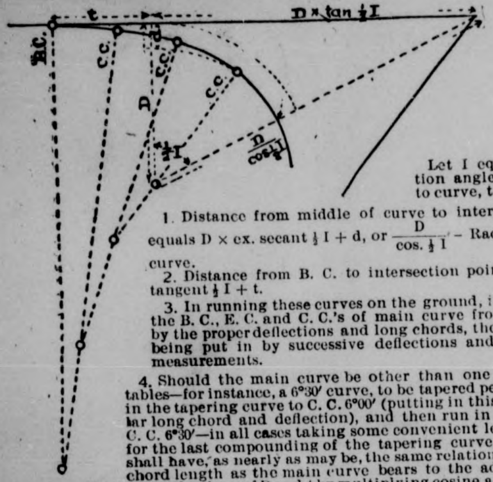
FOR TABLE 1

Curve.	"D."	"t."	e in Tapering h End of Main	' less Radius ve.	rom B. C. of C. C. of Main

RADII FOR 50 FEET CHORDS.

DIAGRAM

Showing "D," "d," "t," of Tapering-Curve Tables,



Let I equal intersection angle of tangents to curve, then:

1. Distance from middle of curve to intersection point equals D × ex. secant ½ I + d, or $\frac{D}{\cos. \frac{1}{2} I}$ – Radius of main curve.

2. Distance from B. C. to intersection point equals D × tangent ½ I + t.

3. In running these curves on the ground, it is best to fix the B. C., E. C. and C. C.'s of main curve from each other by the proper deflections and long chords, the other C. C.'s being put in by successive deflections and short chord measurements.

4. Should the main curve be other than one shown in the tables—for instance, a 6°30' curve, to be tapered per Table 2—run in the tapering curve to C. C. 6°00' (putting in this C. C. by tabular long chord and deflection), and then run in 15 feet of 6° to C. C. 6°30'—in all cases taking some convenient length of chord for the last compounding of the tapering curve, which length shall have, as nearly as may be, the same relation to the tabular chord length as the main curve bears to the adjacent tabular curves. Get corrected values of D and t by multiplying cosine and sine of total curvature up to main curve by the difference of radii of main curve and of last branch of compound curve; subtract cosine product from D, and add sine product to t (as taken from the table for the last branch of the compound curve).

FOR TABLE ½

Degree of Main Curve.	"D."	"t."	Total Curvature in Tapering Curve at Each End of Main Curve.	"d" = "D," less Radius of Main Curve.	Long Chord from B. C. of Taper to C. C. of Main Curve.
° '			° '		
0 30	11459.18	15.00	0 04½	0.01	80.00
0 45	7639.49	30.00	0 13½	0.04	60.00
1 00	5729.70	45.00	0 27	0.10	90.00
1 15	4583.88	60.00	0 45	0.20	120 00
1 30	3820.09	75.00	1 07½	0.34	150.00
1 45	3274.63	90.00	1 34½	0.55	179.99
2 00	2865.65	104.99	2 06	0.83	209.99
2 15	2547.70	119.99	2 42	1.18	239.98
2 30	2293.50	134.98	3 22½	1.62	269.96
2 45	2085.69	149.97	4 07½	2.16	299,93
3 00	1912.72	164.95	4 57	2.81	329.89
3 15	1766.58	179.92	5 51	3.57	359.84
3 30	1641.55	194.88	6 49½	4.47	389.76
8 45	1533.45	209.84	7 52½	5.49	419.65
4 00	1439.14	224.77	9 00	6.67	449 51
4 15	1356.21	239.69	10 12	8.00	479.33
4 30	1282.82	254.59	11 28½	9.50	509.10
4 45	1217.48	269.47	12 49½	11.17	538.81
5 00	1159.03	284.31	14 15	13.03	568.45

RADII FOR 50 FEET CHORDS.

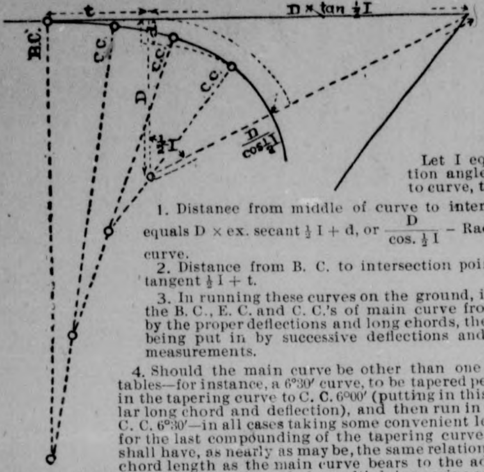
Degree.	Radius.	Degree.	Radius.
° '		° '	
0 15	22918.32	5 15	1091.45
0 30	11459.17	5 30	1041.84
0 45	7639.45	5 45	996.55
1 00	5729.61	6 00	955.04
1 15	4583.69	6 15	916.85
1 30	3819.74	6 30	881.59
1 45	3274.08	6 45	848.95
2 00	2864.84	7 00	818.64
2 15	2546.52	7 15	790.42
2 30	2291.88	7 30	764.08
2 45	2083.53	7 45	739.44
3 00	1909.91	8 00	716.34
3 15	1763.01	8 15	694.65
3 30	1637.09	8 30	604.22
3 45	1527.96	8 45	654.97
4 00	1432,47	9 00	636.78
4 15	1348.21	9 15	619.58
4 30	1273.32	9 30	603.29
4 45	1206.31	9 45	587.83
5 00	1146.01	10 00	573.14

TABLE ½. TAPERING CURVES—CHANGING 0° - 15' EACH 30 FEET.

Transit at	DEFLECTIONS TO																			
	B. C. 0° 15'	C. C. 0° 30'	C. C. 0° 45'	C. C. 1° 00'	C. C. 1° 15'	C. C. 1° 30'	C. C. 1° 45'	C. C. 2° 00'	C. C. 2° 15'	C. C. 2° 30'	C. C. 2° 45'	C. C. 3° 00'	C. C. 3° 15'	C. C. 3° 30'	C. C. 3° 45'	C. C. 4° 00'	C. C. 4° 15'	C. C. 4° 30'	C. C. 4° 45'	C. C. 5° 00'
° '	° '	° '	° '	° '	° '	° '	° '	° '	° '	° '	° '	° '	° '	° '	° '	° '	° '	° '	° '	° '
B. C. 0 15	- - - -	0 02¼	0 05¾	0 10½	0 16¾	0 24¾	0 34¼	0 45	0 57½	1 11¼	1 26¾	1 43½	2 01¾	2 21¾	2 43	3 06	3 30¼	3 56¼	4 23½	4 52½
C. C. 0 30	0 02¼	- - - -	0 04½	0 10¼	0 17¼	0 25¾	0 36	0 47½	1 00¾	1 15¼	1 31½	1 49	2 08¼	2 28¾	2 51	3 14½	3 39¾	4 06¼	4 34½	5 04
C. C. 0 45	0 07¾	0 04½	- - - -	0 06¾	0 14½	0 24	0 34¾	0 47¼	1 01¼	1 16½	1 33½	1 51¾	2 11½	2 33	2 55¾	3 20¼	3 46	4 13½	4 42¼	5 12¾
C. C. 1 00	0 16½	0 12½	0 06¾	- - - -	0 09	0 19¼	0 30¾	0 43¾	0 58½	1 14¾	1 32¼	1 51½	2 12	2 34	2 57¾	3 22¾	3 49½	4 17½	4 47¼	5 18¼
C. C. 1 15	0 28¼	0 23¼	0 16¾	0 09	- - - -	0 11¼	0 23¾	0 37½	0 53	1 09¾	1 28	1 48	2 09½	2 32¼	2 56½	3 22½	3 49¾	4 18¾	4 49	5 21
C. C. 1 30	0 42¾	0 37¼	0 30	0 21¼	0 11¼	- - - -	0 13½	0 28¼	0 44¼	1 02	1 21	1 41½	2 03¾	2 27¼	2 52½	3 19	3 47¼	4 16¾	4 48	5 20½
C. C. 1 45	1 00½	0 54	0 46	0 36¾	0 26	0 13½	- - - -	0 15¾	0 32½	0 51	1 11	1 32¼	1 55	2 19½	2 45¼	3 12¾	3 41½	4 12	4 43¾	5 17¼
C. C. 2 00	1 21	1 14	1 05½	0 55¼	0 43½	0 30½	0 15¾	- - - -	0 18	0 37¼	0 57¾	1 20	1 43½	2 08½	2 35¼	3 03¼	3 33	4 04	4 36¾	5 10¾
C. C. 2 15	1 44½	1 36¾	1 27¼	1 16½	1 04	0 50¼	0 34¾	0 18	- - - -	0 20¼	0 41½	1 04½	1 29	1 54¾	2 22	2 51	3 21¼	3 53¼	4 26½	5 01½
C. C. 2 30	2 11¼	2 02¾	1 52½	1 41	1 27¾	1 13	0 57	0 39¼	0 20¼	- - - -	0 22½	0 46¼	1 11¼	1 38	2 06	2 35½	3 06¾	3 39¼	4 13½	4 49
C. C. 2 45	2 41	2 31½	2 20¾	2 08¼	1 54½	1 39	1 22	1 03¾	0 44	0 22½	- - - -	0 24¾	0 50¾	1 18	1 46¾	2 17¼	2 49	3 22½	3 57¼	4 33¾
C. C. 3 00	3 13½	3 03½	2 51¾	2 38½	2 24	2 08	1 50¼	1 31	1 10½	0 48¼	0 24¾	- - - -	0 27	0 55	1 24¾	1 55¾	2 28½	3 02¾	3 38¼	4 15¼
C. C. 3 15	3 49¼	3 38¼	3 26	3 12	2 56½	2 39¾	2 21½	2 01½	1 40	1 17¼	0 52¾	0 27	- - - -	0 29¼	0 59¾	1 31½	2 04¾	2 39¾	3 16	3 54
C. C. 3 30	4 27¾	4 16¼	4 03	3 48½	3 32¼	3 14¾	2 55½	2 34¾	2 12¾	1 49¼	1 24	0 57½	0 29¼	- - - -	0 31½	1 04	1 38¼	2 14	2 51	3 29½
C. C. 3 45	5 09½	4 57	4 43¼	4 27¾	4 11	3 52½	3 32½	3 11¼	2 48½	2 24	1 58¼	1 30¾	1 01¾	0 31½	- - - -	0 33¾	1 08½	1 45	2 22¾	3 02¼
C. C. 4 00	5 54	5 41	5 26¼	5 10¼	4 52½	4 33½	4 12¾	3 50½	3 27	3 02	2 35¼	2 07¼	1 37½	1 06¼	0 33¾	- - - -	0 36	1 13¼	1 51¾	2 32
C. C. 4 15	6 41¾	6 27¾	6 12½	5 55½	5 37¼	5 17¼	4 56	4 33	4 08¾	3 42¾	3 15½	2 46½	2 16	1 44¼	1 10¾	0 36	- - - -	0 38¼	1 17½	1 58½
C. C. 4 30	7 32¼	7 17¾	7 01½	6 44	6 24¾	6 04¼	5 42	5 18½	4 53¼	4 26¾	3 58½	3 28¾	2 57¾	2 25	1 51	1 15¼	0 38¼	- - - -	0 40½	1 22
C. C. 4 45	8 26	8 10½	7 53¾	7 35¼	7 15½	6 54	6 31¼	6 06¾	5 41	5 13½	4 44¾	4 14¼	3 42½	3 09	2 34¼	1 57¾	1 20	0 40½	- - - -	0 42¾
C. C. 5 00	9 22¾	9 06½	8 48¾	8 29¾	8 09	7 47	7 23¼	6 58¼	6 31½	6 03½	5 33¾	5 02¾	4 30	3 55¾	3 20¼	2 43	2 04½	1 24¼	0 42¾	- - - -

DIAGRAM

Showing "D," "d," "t," of Tapering-Curve Tables,



Let I equal intersection angle of tangents to curve, then:

1. Distance from middle of curve to intersection point equals D × ex. secant ½ I + d, or $\frac{D}{\cos. \frac{1}{2} I}$ − Radius of main curve.

2. Distance from B. C. to intersection point equals D × tangent ½ I + t.

3. In running these curves on the ground, it is best to fix the B. C., E. C. and C. C.'s of main curve from each other by the proper deflections and long chords, the other C. C.'s being put in by successive deflections and short chord measurements.

4. Should the main curve be other than one shown in the tables—for instance, a 6°30′ curve, to be tapered per Table 2—run in the tapering curve to C. C. 6°00′ (putting in this C. C. by tabular long chord and deflection), and then run in 15 feet of 6° to C. C. 6°30′—in all cases taking some convenient length of chord for the last compounding of the tapering curve, which length shall have, as nearly as may be, the same relation to the tabular chord length as the main curve bears to the adjacent tabular curves. Get corrected values of D and t by multiplying cosine and sine of total curvature up to main curve by the difference of radii of main curve and of last branch of compound curve; subtract cosine product from D, and add sine product to t (as taken from the table for the last branch of the compound curve).

FOR TABLE 1

Degree of Main Curve.	"D."	"t."	Total Curvature in Tapering Curve at Each End of Main Curve.	"d" = "D," less Radius of Main Curve.	Long Chord from B. C. of Taper to C. C. of Main Curve.
° ′			° ′		
1 00	5729.61	15.01	0 09	0.00	30.00
1 30	3819.80	30.00	0 27	0.06	60.00
2 00	2865.01	45.00	0 54	0.17	90.00
2 30	2292.24	60.00	1 30	0.37	120.00
3 00	1910.57	75.00	2 15	0.66	149.99
3 30	1638.17	89.99	3 09	1.08	179.98
4 00	1434.10	104.98	4 12	1.63	209.95
4 30	1275.66	119.96	5 24	2.34	239.91
5 00	1149.22	134.92	6 45	3.22	269.84
5 30	1046.14	149.87	8 15	4.30	299.73
6 00	960.63	164.79	9 54	5.59	329.57
6 30	888.71	179.69	11 42	7.11	359.35
7 00	827.53	194.54	13 39	8.89	389.03
7 30	775.02	209.35	15 45	10.94	418.61
8 00	729.62	224.10	18 00	13.28	448.05
8 30	690.14	238.78	20 24	15.92	477.33
9 00	655.66	253.38	22 57	18.88	506.41
9 30	625.47	267.88	25 39	22.18	535.25
10 00	598.97	282.27	28 30	25.83	563.82

RADII FOR 50 FEET CHORDS.

Degree.	Radius.	Degree.	Radius.
° ′		° ′	
0 30	11459.166	10 30	545.865
1 00	5729.608	11 00	521.071
1 30	3819.742	11 30	498.433
2 00	2864.837	12 00	477.683
2 30	2291.876	12 30	458.594
3 00	1909.913	13 00	440.973
3 30	1637.086	13 30	424.659
4 00	1432.468	14 00	409.510
4 30	1273.321	14 30	395.407
5 00	1146.006	15 00	382.245
5 30	1041.841	15 30	369.932
6 00	955.041	16 00	358.390
6 30	881.592	16 30	347.547
7 00	818.639	17 00	337.343
7 30	764.080	17 30	327.723
8 00	716.343	18 00	318.637
8 30	674.222	18 30	310.043
9 00	636.784	19 00	301.902
9 30	603.286	19 30	294.179
10 00	573.139	20 00	286.843

TABLE 1. TAPERING CURVES—CHANGING 0° - 30′ EACH 30 FEET.

Transit at	Deflections to																			
	B. C. 0° 30′	C. C. 1° 00′	C. C. 1° 30′	C. C. 2° 00′	C. C. 2° 30′	C. C. 3° 00′	C. C. 3° 30′	C. C. 4° 00′	C. C. 4° 30′	C. C. 5° 00′	C. C. 5° 30′	C. C. 6° 00′	C. C. 6° 30′	C. C. 7° 00′	C. C. 7° 30′	C. C. 8° 00′	C. C. 8° 30′	C. C. 9° 00′	C. C. 9° 30′	C. C. 10° 00′
° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′
B. C. 0 30		0 04½	0 11¼	0 21	0 33¾	0 49½	1 08¼	1 30	1 54¾	2 22½	2 53¼	3 27	4 03¾	4 43½	5 26	6 11¾	7 00¼	7 52	8 46½	9 44
C. C. 1 00	0 04½		0 09	0 20¼	0 34½	0 51¾	1 12	1 35¼	2 01½	2 30¾	3 03	3 38¼	4 16½	4 57¾	5 41¾	6 29	7 19¼	8 12¼	9 08¼	10 07¼
C. C. 1 30	0 15¾	0 09		0 13½	0 29¼	0 48	1 09¾	1 34½	2 02¼	2 33	3 06¾	3 43½	4 23¼	5 06	5 51½	6 40¼	7 32	8 26½	9 24¼	10 24¾
C. C. 2 00	0 33	0 24¾	0 13½		0 18	0 38¼	1 01½	1 27¾	1 57	2 29¼	3 04½	3 42¾	4 24	5 08¼	5 55½	6 45½	7 38¾	8 35	9 34	10 36
C. C. 2 30	0 56¼	0 46½	0 33¾	0 18		0 22½	0 47¼	1 15	1 45¾	2 19½	2 56¼	3 36	4 18¾	5 04½	5 53¼	6 45	7 39½	8 37¼	9 37¾	10 41½
C. C. 3 00	1 25½	1 14¼	1 00	0 42¾	0 22½		0 27	0 56¼	1 28½	2 03¾	2 42	3 23¼	4 07½	4 54¾	5 45	6 38¼	7 34¼	8 33½	9 35¾	10 40¾
C. C. 3 30	2 00¾	1 48	1 32¼	1 13½	0 51¾	0 27		0 31½	1 05¼	1 42	2 21¾	3 04½	3 50¼	4 39	5 30¾	6 25½	7 23¼	8 23¾	9 27½	10 34
C. C. 4 00	2 42	2 27¾	2 10½	1 50¼	1 27	1 00¾	0 31½		0 36	1 14¼	1 55½	2 39¾	3 27	4 17¼	5 10½	6 06¾	7 06	8 08	9 13¼	10 21½
C. C. 4 30	3 29¼	3 13½	2 54¾	2 33	2 08¼	1 40½	1 09¾	0 36		0 40½	1 23¼	2 09	2 57¾	3 49½	4 44¼	5 42	6 42¾	7 46¼	8 53	10 02¾
C. C. 5 00	4 22½	4 05¼	3 45	3 21¾	2 55½	2 26¼	1 54	1 18¾	0 40½		0 45	1 32¼	2 22½	3 15¾	4 12	5 11¼	6 13½	7 18¾	8 27	9 38
C. C. 5 30	5 21¾	5 03	4 41¼	4 16½	3 48¾	3 18	2 44¼	2 07½	1 27¾	0 45		0 49½	1 41¼	2 36	3 33¾	4 34½	5 38¼	6 45	7 54¾	9 07½
C. C. 6 00	6 27	6 06¾	5 43½	5 17¼	4 48	4 15¾	3 40½	3 02¼	2 21	1 36¾	0 49½		0 54	1 50¼	2 49½	3 51¾	4 57	6 05¼	7 16½	8 30¾
C. C. 6 30	7 38¼	7 16½	6 51¾	6 24	5 53¼	5 19½	4 42¾	4 03	3 20¼	2 34½	1 45¾	0 54		0 58½	1 59¼	3 03	4 09¾	5 19½	6 32¼	7 48
C. C. 7 00	8 55½	8 32¼	8 06	7 36¾	7 04½	6 29¼	5 51	5 09¾	4 25½	3 38¼	2 48	1 54¾	0 58½		1 03	2 08¼	3 16½	4 27¾	5 42	6 59¼
C. C. 7 30	10 19	9 54¼	9 26½	8 55½	8 21¾	7 45	7 05¼	6 22½	5 36¾	4 48	3 56¼	3 01½	2 03¾	1 03		1 07½	2 17¼	3 30	4 45¾	6 04½
C. C. 8 00	11 48¼	11 22	10 52¾	10 20¼	9 45	9 06¾	8 25½	7 41¼	6 54	6 03¾	5 10½	4 14¼	3 15	2 12¾	1 07½		1 12	2 26¼	3 43½	5 03¾
C. C. 8 30	13 23¾	12 55¾	12 25	11 51¼	11 14½	10 34¾	9 51¾	9 06	8 17¼	7 25½	6 30¾	5 33	4 32¼	3 28½	2 21¾	1 12		1 16½	2 35¼	3 57
C. C. 9 00	15 05	14 35¾	14 03½	13 28	12 49¾	12 08½	11 24¼	10 37	9 46½	8 53¼	7 57	6 57¾	5 55½	4 50¼	3 42	2 30¾	1 16½		1 21	2 44¼
C. C. 9 30	16 52½	16 21¾	15 47¾	15 11	14 31¼	13 48¼	13 02½	12 13¾	11 22	10 27	9 29¼	8 28½	7 24¾	6 18	5 08¼	3 55½	2 39¾	1 21		1 25½
C. C. 10 00	18 46	18 13¾	17 38¼	17 00	16 18½	15 34¼	14 47	13 56½	13 03¼	12 07	11 07½	10 05¼	9 00	7 51¾	6 40½	5 26¼	4 09	2 48¾	1 25½	

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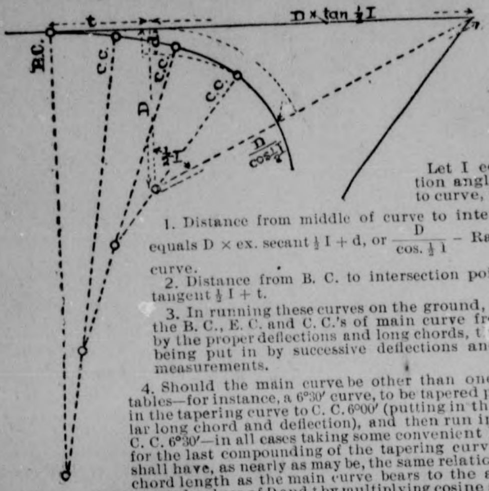
Form 3015

DIAGRAM

Showing "D," "d," "t," of Tapering-Curve Tables.



Let I equal intersection angle of tangents to curve, then:

1. Distance from middle of curve to intersection point equals D × ex. secant ½ I + d, or $\frac{D}{\cos. \frac{1}{2} I}$ − Radius of main curve.

2. Distance from B. C. to intersection point equals D × tangent ½ I + t.

3. In running these curves on the ground, it is best to fix the B. C., E. C. and C. C.'s of main curve from each other by the proper deflections and long chords, the other C. C.'s being put in by successive deflections and short chord measurements.

4. Should the main curve be other than one shown in the tables—for instance, a 6°30′ curve, to be tapered per Table 2—run in the tapering curve to C. C. 6°00′ (putting in this C. C. by tabular long chord and deflection), and then run in 15 feet of 6° to C. C. 6°30′—in all cases taking some convenient length of chord for the last compounding of the tapering curve, which length shall have, as nearly as may be, the same relation to the tabular chord length as the main curve bears to the adjacent tabular curves. Get corrected values of D and t by multiplying cosine and sine of total curvature up to main curve by the difference of radii of main curve and of last branch of compound curve; subtract cosine product from D, and add sine product to t (as taken from the table for the last branch of the compound curve).

TABLE 2.

TAPERING CURVES—CHANGING 1° 00′ TO EACH 30 FEET.

Transit at	DEFLECTIONS TO									
	B.C. 1°	C.C. 2°	C.C. 3°	C.C. 4°	C.C. 5°	C.C. 6°	C.C. 7°	C.C. 8°	C.C. 9°	C.C. 10°
	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′
B. C. 1°	....	0 9	0 22½	0 42	1 07½	1 39	2 16½	3 00	3 49½	4 45
C. C. 2°	0 09	....	0 18	0 40½	1 09	1 43½	2 24	3 10½	4 03	5 01½
C. C. 3°	0 31½	0 18	....	0 27	0 58½	1 36	2 19½	3 09	4 04½	5 06
C. C. 4°	1 06	0 49½	0 27	....	0 36	1 16½	2 03	2 55½	3 54	4 58½
C. C. 5°	1 52½	1 33	1 07½	0 36	....	0 45	1 34½	2 30	3 31½	4 39
C. C. 6°	2 51	2 28½	2 00	1 25½	0 45	....	0 54	1 52½	2 57	4 07½
C. C. 7°	4 01½	3 36	3 04½	2 27	1 43½	0 54	....	1 03	2 10½	3 24
C. C. 8°	5 24	4 55½	4 21	3 40½	2 54	2 01½	1 03	....	1 12	2 28½
C. C. 9°	6 58½	6 27	5 49½	5 06	4 16½	3 21	2 19½	1 12	....	1 21
C. C. 10°	8 45	8 10½	7 30	6 43½	5 51	4 52½	3 48	2 37½	1 21	....

FOR TABLE 2.

Degree of Main Curve.	"D."	"t."	Total Curvature in Tapering Curve at Each End of Main Curve.	"d" = "D," less Radius of Main Curve.	Long Chord from B. C. of Taper to C. C. of Main Curve.
			° ′		
2°	2864.87	15.00	0 18	0.03	30.00
3°	1910.06	30.00	0 54	0.14	60.00
4°	1432.85	45.00	1 48	0.38	90.00
5°	1146.78	60.00	3 00	0.77	119.99
6°	956.40	74.99	4 30	1.36	149.96
7°	820.82	89.95	6 18	2.18	179.91
8°	719.62	104.90	8 24	3.28	209.81
9°	641.47	119.80	10 48	4.69	239.63
10°	579.59	134.66	13 30	6.45	269.35

RADII FOR 50 FEET CHORDS.

Degree	Radius	Degree	Radius
° ′		° ′	
1 00..	5729.61	6 00	955.04
1 30..	3819.74	6 30	881.59
2 00..	2864.84	7 00	818.64
2 30..	2291.88	7 30	764.08
3 00..	1909.91	8 00	716.34
3 30..	1637.09	8 30	674.22
4 00..	1432.47	9 00	636.78
4 30..	1273.32	9 30	603.29
5 00..	1146.01	10 00	573.14
5 30..	1041.84	......	......

TABLE 1.

TAPERING CURVES.

CHANGING 0° 30′ EACH 30 FEET.

Transit at	DEFLECTIONS TO					
	B. C. 0° 30′	C. C. 1° 00′	C. C. 1° 30′	C. C. 2° 00′	C. C. 2° 30′	C. C. 3° 00′
° ′	° ′	° ′	° ′	° ′	° ′	° ′
B.C. 0 30	..	0 4½	0 11¼	0 21	0 33¾	0 49½
C.C. 1 00	0 04½	....	0 09	0 26¼	0 34½	0 51¾
C.C. 1 30	0 15¾	0 09	....	0 13½	0 29¼	0 48
C.C. 2 00	0 33	0 24¾	0 13½	....	0 18	0 38¼
C.C. 2 30	0 56¼	0 46½	0 33¾	0 18	....	0 22½
C.C. 3 00	1 25½	1 14¼	1 00	0 42¾	0 22½	....

TABLE 3.

TAPERING CURVES.

CHANGING 2° 30′ TO EACH 30 FEET.

Transit at	DEFLECTIONS TO							
	B. C. 2° 30′	C. C. 5° 00′	C. C. 7° 30′	C. C. 10° 00′	C. C. 12° 30′	C. C. 15° 00′	C. C. 17° 30′	C. C. 20° 00′
° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′
B.C. 2 30	....	0 22½	0 56¼	1 45	2 48¾	4 07½	5 41	7 29½
C.C. 5 00	0 22½	....	0 45	1 41¼	2 52½	4 18¾	6 00	7 56
C.C. 7 30	1 18¾	0 45	....	1 07½	2 26¼	4 00	5 48¾	7 52½
C.C. 10 00	2 45	2 03¾	1 07½	....	1 30	3 11¼	5 07½	7 18¾
C.C. 12 30	4 41¼	3 52½	2 48¾	1 30	....	1 52½	3 56¼	6 15
C.C. 15 00	7 07½	6 11¼	5 00	3 33¾	1 52½	....	2 15	4 41¼
C.C. 17 30	10 04	9 00	7 41¼	6 07½	4 18¾	2 15	....	2 37½
C.C. 20 00	13 30½	12 19	10 52½	9 11¼	7 15	5 03¾	2 37½	....

TABLE 4.

TAPERING CURVES

CHANGING 2° 30′ TO EACH 15 FEET.

Transit at	DEFLECTIONS TO							
	B. C. 2° 30′	C. C 5° 00′	C. C. 7° 30′	C. C. 10° 00′	C. C. 12° 30′	C. C. 15° 00′	C. C. 17° 30′	C. C. 20° 00′
° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′	° ′
B.C. 2 30	....	0 11¼	0 28⅛	0 52½	1 24⅜	2 03⅜	2 50⅝	3 45
C.C. 5 00	0 11¼	....	0 22½	0 50⅝	1 26¼	2 09⅜	3 00	3 58⅛
C.C. 7 30	0 39⅜	0 22½	....	0 33¾	1 13⅛	2 00	2 54⅜	3 56¼
C.C. 10 00	1 22½	1 01⅞	0 33¾	....	0 45	1 35⅝	2 33⅜	3 39⅜
C.C. 12 30	2 20⅝	1 56¼	1 24⅜	0 45	....	0 56¼	1 58⅛	3 07½
C.C. 15 00	3 33¾	3 05⅝	2 30	1 46⅞	0 56¼	....	1 07½	2 20⅝
C.C. 17 30	5 01⅞	4 30	3 50⅝	3 03¾	2 09⅜	1 07½	....	1 18¾
C.C. 20 00	6 45	6 09⅜	5 26¼	4 35⅝	3 37½	2 31⅞	1 18¾	....

FOR TABLE 1.

Degree of Main Curve.	"D."	"t."	Total Curvature in Tapering Curve at Each End of Main Curve.	"d," = "D," less Radius of Main Curve.	Long Chord from B. C. of Taper to C. C. of Main Curve.
° ′			° ′		
1 00	5729.61	15.00	0 09	0.00	30.00
1 30	3819.80	30.00	0 27	0.06	60.00
2 00	2865.01	45.00	0 54	0.17	90 00
2 30	2292.24	60.00	1 30	0.37	120.00
3 00	1910.57	75.00	2 15	0.66	149.99

FOR TABLE 3.

Degree of Main Curve.	"D."	"t."	Total Curvature in Tapering Curve at Each End of Main Curve.	"d," = "D," less Radius of Main Curve.	Long Chord from B. C. of Taper to C. C. of Main Curve.
° ′			° ′		
5 00	1146.11	15.00	0 45	0.10	30.00
7 30	764.48	29.99	2 15	0.40	60.00
10 00	574.12	44.97	4 30	0.99	89.98
12 30	460.56	59 93	7 30	1.97	119.92
15 00	385.68	74.82	11 15	3.43	149.76
17 30	333.20	89 62	15 45	5.48	179.43
20 00	295.04	104.27	21 00	8.20	208.80

FOR TABLE 4.

Degree of Main Curve.	"D."	"t."	Total Curvature in Tapering Curve at Each End of Main Curve.	"d," = "D," less Radius of Main Curve.	Long Chord from B. C. of Taper to C. C. of Main Curve.
° ′			° ′		
5 00	1146.03	7.50	0 22½	0.02	15.00
7 30	764.18	15.00	1 07½	0.10	30.00
10 00	573.38	22.50	2 15	0.24	45.00
12 30	459.08	29.99	3 45	0.49	59.99
15 00	383.10	37.47	5 37½	0 86	74.97
17 30	329.09	44.94	7 52½	1.37	89.93
20 00	288.90	52.39	10 30	2.06	104.85

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24"dia. Vitrified Pipe through Locke's levee opposite T1156+00		54
36"dia. Cast Iron Pipe	Sta. "T" 1156+0.2	55
24"dia Cast Iron Pipe	Sta. "T" 1158+0.2	56
24"dia. Vitrified Pipe	Sta. "T" 1175+95.2	59
24"dia Vitrified Pipe	Sta. "T" 1183+64.2	60
24"dia. Cast Iron Pipe	Sta. "T" 1187+93^{2}	61
24"dia. Vitrified Pipe	Sta. "E" 1420+75^{4}	62
24"dia. Vitrified Pipe	Sta. "E" 1424+50^{0}	63
24"dia Cast Iron Pipe	Sta. "E" 1434+11^{2}	64
12"dia. Vitrified Pipe	Sta. "E" 1437+89^{5}	65
24"dia Cast Iron Pipe	Sta. "E" 1444+63^{0}	66
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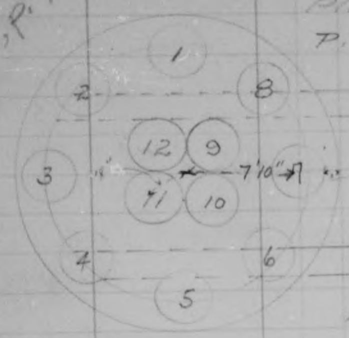
Snodgrass Slough Draw Span, Pivot Pier Sta. "T" 1109 + 05 3
Snodgrass Slough Draw Span, Pivot Pier Sta. "T" 1109+05, Pile Plan 4
Snodgrass Slough Draw Span, East Abutment Sta. "T" 1108 + 13^{33} 5
Snodgrass Slough Draw Span, Pivot Pier. diameter Piles at Cut Off 6
Snodgrass Slough Draw Span. West Abutment, diameter Piles at Cut Off 7
Snodgrass Slough Draw Span. Material used in Foundation 8

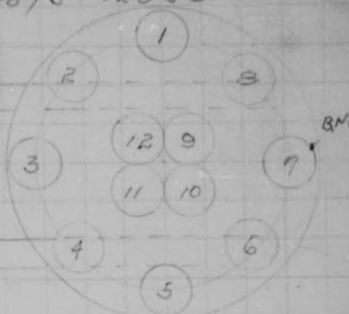
See summary of yardage, p. 9.

WEST ABUT STA "T" 1109+96 ^{63}

Plans # ~~11871~~ 11781 + ~~11872~~ 11782 - ~~11873~~ 11783 - 12050

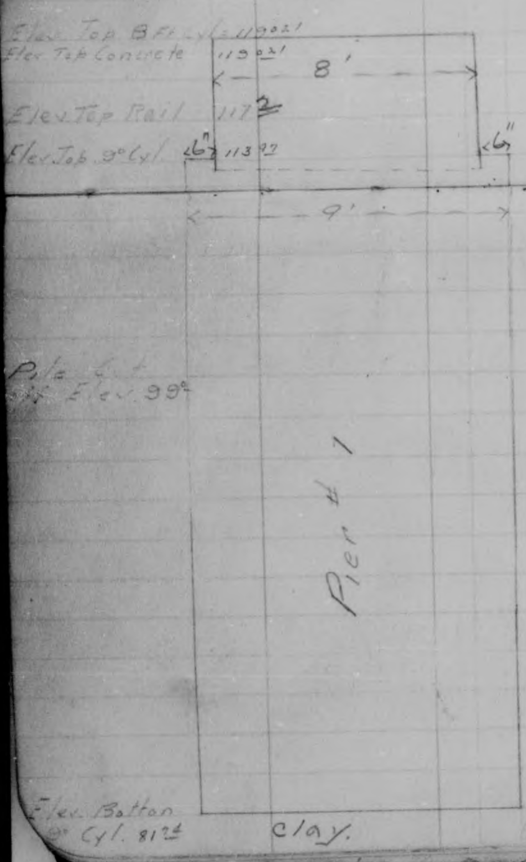
Pile plan - #11847





Note 9, 60# Rail used in each Pier Per Plan # 12004.

Rails 6' 6" Long.


Elev Top B Ft Cyl = 119^{021}
Elev Top Concrete 119^{021}
8'
Elev Top Rail 117^{2}
Elev Top 9° Cyl 6" 113^{97}
6"
9'
Pier # 1
Elev Botton 9' Cyl. 81^{24}
Clay.

828 Sacks Std. P'tld. Cement Used

Concrete Prop. 5:2

Company Force Used.

Started Concreting 6/7/11

Finished Concreting 6/25/11

Crushed Rock From Natomas.

Sand from Enwood.

Foundation Blue Clay.

B. M. Elev. 119^{026}

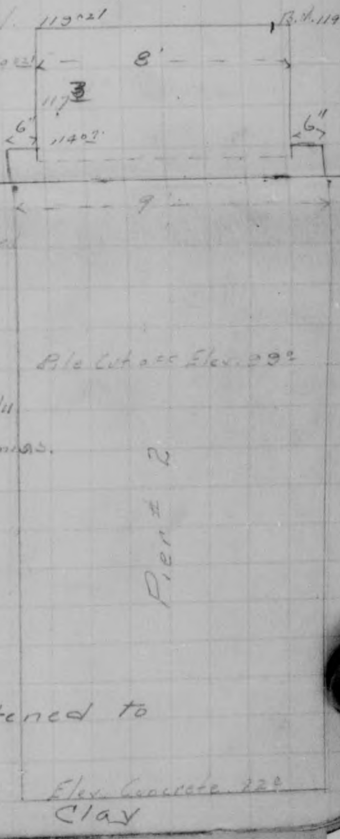
Note

Diam. Piles. See Page 7.

Length of casing shortened to suit the ground

Elev Botton Concrete 82^{2}

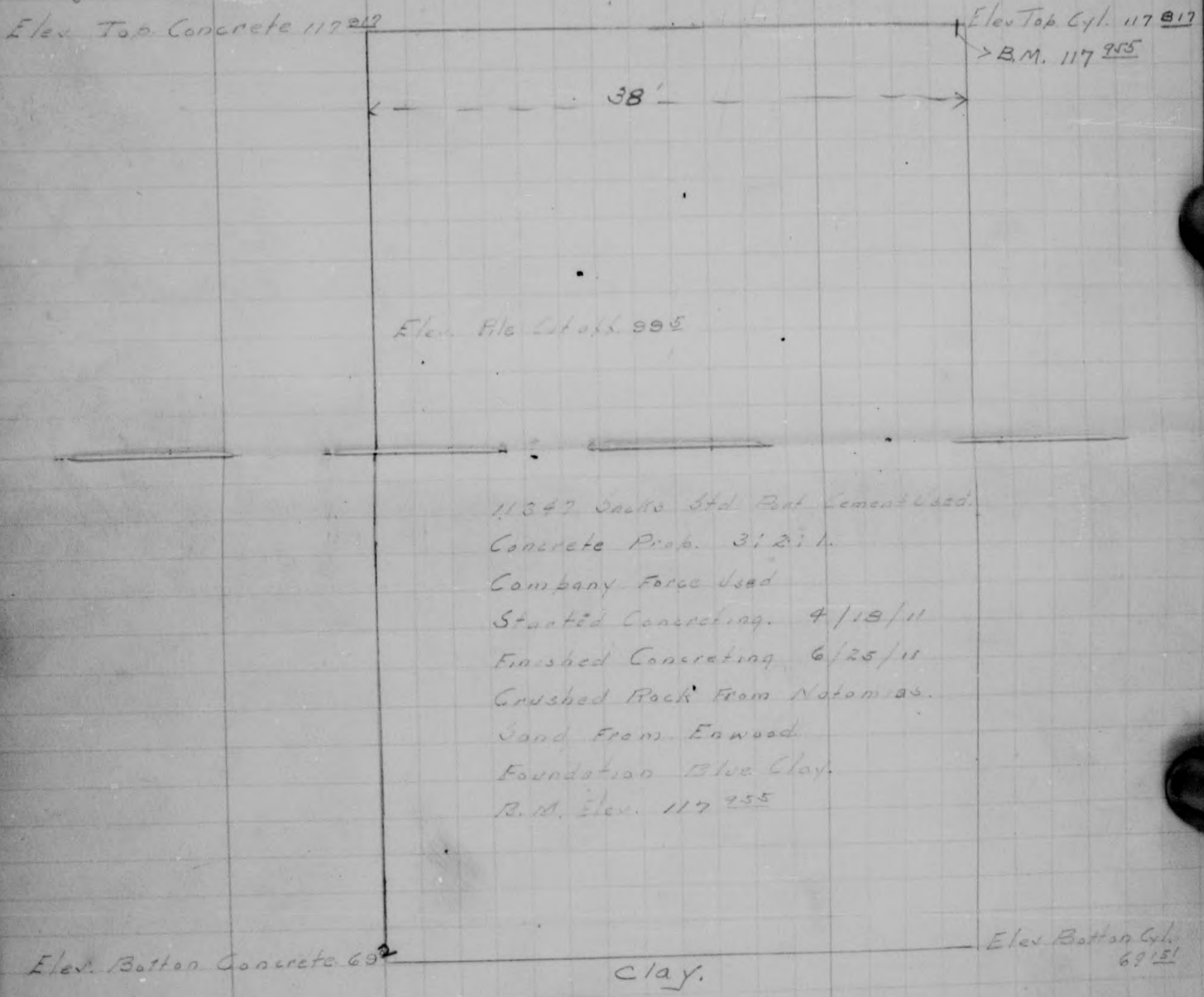
Elev Botton of Cyl. 81^{24}


Elev Top 8' Cyl. 119^{021}
B. M. 119^{026}
Elev Top Con. 119^{021}
8'
Elev Top Rail 117^{3}
Elev Top 9' Cyl. 6" 114^{07}
6"
9'
Pile Cut off Elev. 99^{2}
Pier # 2
Elev. Concrete 82^{2}
Clay

See summary of yardage p. 9.

PIVOT PIER STAT. T 1109+05

Plans 12050 - 11871 - 11872


Elev Top Concrete 117^{817}
Elev Top Cyl. $117^{\underline{817}}$
>B.M. $117^{\underline{955}}$
38'
Elev. Pile Cutoff 99^{5}
Elev. Botton Concrete 69^{2}
Elev Botton Cyl. $69^{\underline{151}}$
Clay.

11347 Sacks Std Port Cement Used.
Concrete Prop. 3:2:1.
Company Force Used
Started Concreting. 4/18/11
Finished Concreting 6/25/11
Crushed Rock From Natomas.
Sand From Elmwood
Foundation Blue Clay.
B.M. Elev. $117^{\underline{955}}$

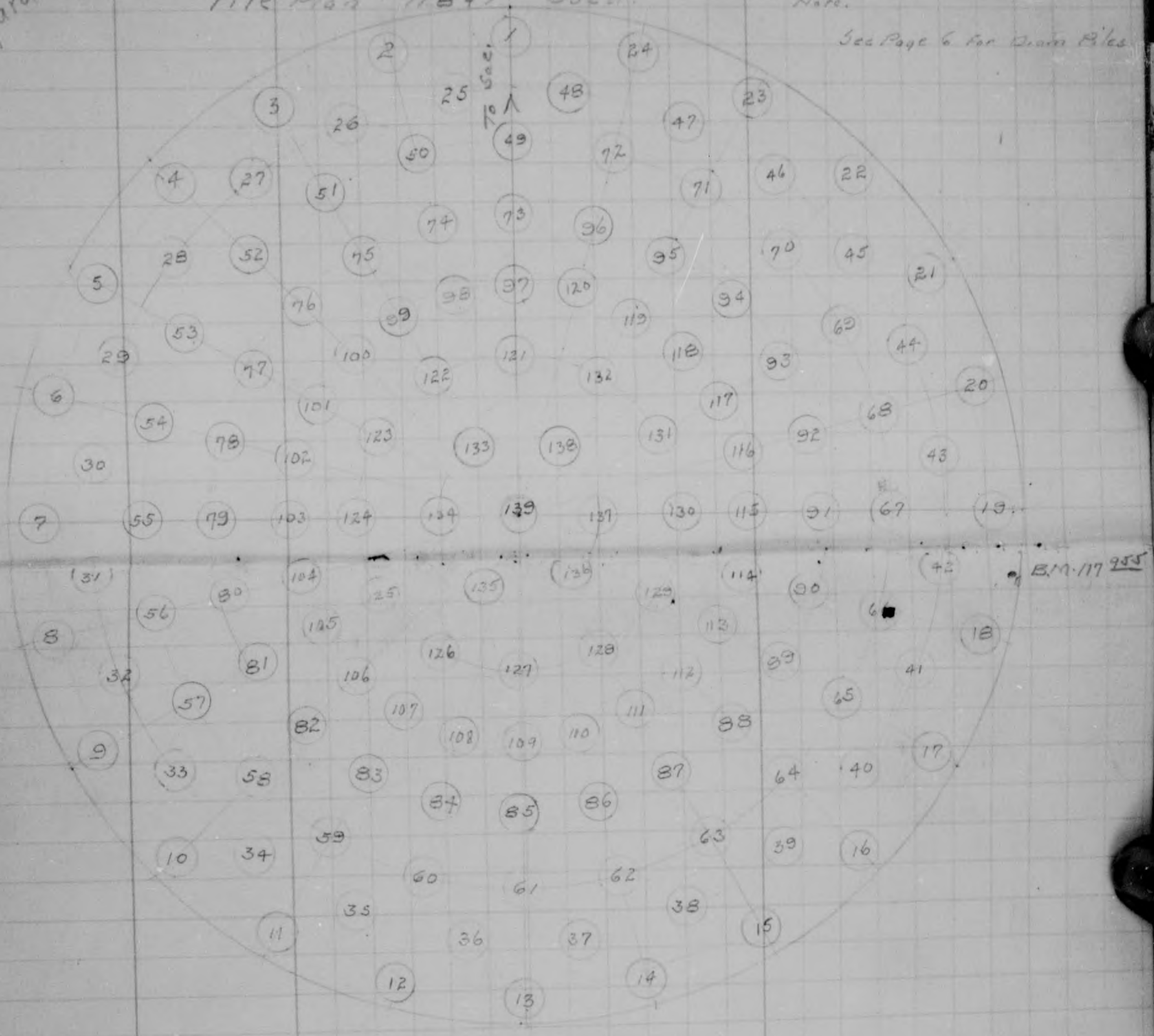
PIVOT PIER "STAT" T. 1109+05

Pile Plan # 11847 Used.

See summary of yardage p. 9

Note.

See Page 6 for Drain Piles

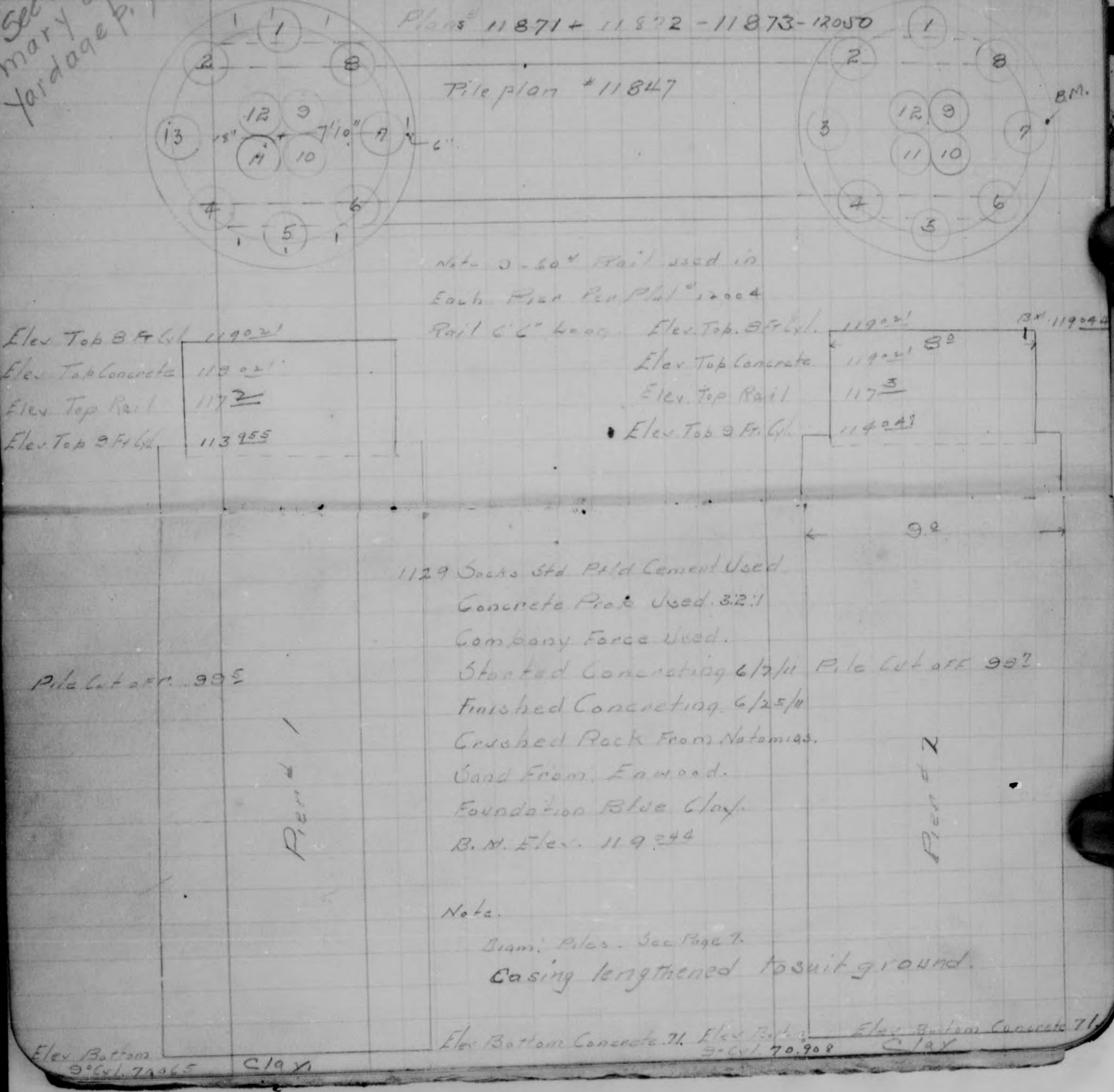


See summary of yardage p. 9

EAST. ABUT. STAT "T" 1108+13^33

Plans 11871 + 11872 - 11873 - 12050

Pile plan #11847


1
2
3
4
5
6
7
8
9
10
11
12
13
18"
7'10"
6"
B.M.
Elev Top 8 Ft Cyl 119.021
Elev Top Concrete 119.021
Elev Top Rail 117.2
Elev Top 9 Ft Cyl 113.955
Elev Top. 8 Ft Cyl. 119.021
Elev Top Concrete 119.021
Elev Top Rail 117.3
Elev Top 9 Ft Cyl 114.041
B.M. 119.044
8.0
9.0
Pile Cut off 99.5
Pile Cut off 99.7
Pier #1
Pier #2
Elev Bottom 9' Cyl 70.065
Clay
Elev Bottom Concrete 71.
Elev Bottom 9' Cyl 70.908
Elev Bottom Concrete 71.
Clay

Note 3 - 60# Rail used in
Each Pier Per Plan #12004
Rail 6'6" Long.

1129 Sacks Std Pt'ld Cement Used
Concrete Prop Used 3.2.1
Company Force Used.
Started Concreting 6/7/11
Finished Concreting 6/25/11
Crushed Rock From Natomias.
Sand From Elwood.
Foundation Blue Clay.
B.M. Elev. 119.044

Note.
Diam. Piles. See Page 7.
Casing lengthened to suit ground.

See Summary of Yardage P. 9

Diameter Piles Pivot Pier at Cut Off. 6

Pile #1 - 16", Pile #2 - 15", Pile #3 16", Pile #4, 14", Pile #5, 18", Pile #6, 17" Pile #7, 18"
" 8 - 19", " 9 - 16", " 10, 17" " 11, 14" " 12 - 18", " 13, 17" " 14, 16"
" 15 - 14" " 16 - 16" " 17 - 15" " 18 - 16" " 19 - 16" " 20 - 16" " 21 - 16"
" 22 - 14" " 23 - 18" " 24 - 16" " 25 - 14" " 26 - 16" " 27 - 15" " 28 - 15"
" 29 14" " 30 - 15" " 31 - 15" " 32 - 17" " 33 - 14" " 34 - 16" " 35 - 15"
" 35 15" " 36 - 15" " 37 - 14" " 38 - 16" " 39 17" " 40 - 14" " 41 - 16"
" 42 16" " 43 - 17" " 44 - 15" " 45 - 17" " 46 17" " 47 - 15" " 48 - 14"
" 49 16" " 50 - 18" " 51 - 14" " 52 - 16" " 53 14" " " 54 - 15" " 55 18"
" 59 17"
" 56 16" " 57 - 16" " 58 15" " 60 14" " 61 - 17" " 62 16" " 63 15"
" 64 16" " 65 15" " 66 14" " 67 16" " 68 15" " 69 18" " 70 17"
" 71 17" " 72 18" " 73 19" " 74 16" " 75 16" " 76 14 " 77 15"
" 78 14" " 79 15" " 80 16" " 81 15" " 82 15 " 83 15 " 84 15"
" 85 15" " 86 17" " 87 15" " 88 16" " 89 16" " 90 15 " 91 16
" 92 16 " 93 17 " 94. 15" " 95 16" " 96 15" " 97 17 " 98 16
" 99 16 " 100. 18 " 101 15 " 102 15 " 103 15 " 104 17 " 105 15"
" 106 16 " 107 15 " 108 - 20 " 109 14 " 110 17 " 111 17 " 112 15
" 113 17 " 114 16 " 115 - 15 " 116 18 " 117 15 " 118 15 " 119 16
" 120 18 " 121 15 " 122 - 16 " 123 15 " 124 15 " 125 15 " 126 16
" 127 14 " 128 15 " 129 - 16 " 130 14 " 131 15 " 132 15 " 133 15
" 134 15 " 135 17 " 136 16 " 137 15 " 138 14 " 139 19.

See Summary of Yardage p. 9.

7.

Diameter Piles West Abut, at Cut Off.

Pier #1.

Pile # 1	15"	Pile # 2	14"	Pile # 3	14"	Pile # 4	14"	Pile # 5	16"
" # 6	14"	" # 7	15"	" # 8	14"	" # 9	15"	" # 10	16"
" # 11	15"	" # 12	15"						

Pier # 2

Pile # 1	14"	Pile # 2	14"	Pile # 3	14"	Pile # 4	14"	Pile # 5	14"
" # 6	14"	" # 7	14"	" # 8	16"	" # 9	14"	" # 10	14"
" # 11	14"	" # 12	14"						

Diameter Piles East Abut. at Cut OFF.

Pier # 1.

Pile # 1	15"	Pile # 2	14"	Pile # 3	14"	Pile # 4	14"	Pile # 5	14"
" # 6	14"	" # 7	14"	" # 8	15	" 9	14	" # 10	15
" # 11	14"	" # 12	15						

Pier # 2

Pile # 1	14"	Pile # 2	16"	Pile # 3	14	Pile # 4	14	Pile # 5	15
" # 6	14	" # 7	14	" # 8	14	" # 9	14	" # 10	14
" # 11	14	" # 12	14.						

0306

See Summary of Yardage P. 9.

Copy of Memorandum of Material used in the Foundation of Snodgras Slough Drawspan.
Copy taken from letter of C.R. Broughton, dated. Oct 23. 1911.

East Abut.

Pier #1.
92 Cubic yards Crushed Rock.
61 " " Enwood Sand.
563 Sacks. "Standard Portland Cement."

Pier #2.
92 Cubic yards. Crushed Rock.
61 " " . Enwood Sand.
566 Sacks. "Standard Portland Cement."

Pivot Pier
1768 Cubic yards. Crushed Rock.
1179 " " Enwood Sand.
11347 Sacks Standard Portland Cement.

West Abut.

Pier #1.
75. Cubic yards Crushed Rock.
50 " " . Enwood Sand.
417 Sacks Standard Portland Cement.

Pier #2.
75 Cubic yards Crushed Rock.
50 " " Enwood Sand.
417 Sacks Standard Portland Cement.

10-26-11. P.A.

Total = 2102+ Cu. yds. Crushed rock.

0307

See details,
PP. 2 to 8
inclusive.

Draw-Span, Snodgrass Slough

Summary:

E. Abutment			
Pier #1	96.363 ✓		
" #2	96.478 ✓	192.841 ✓	Cu. yds.
Pivot Pier		1720.419 ✓	" "
W. Abutment			
Pier #1	75.673 ✓		
" #2	76.418 ✓	152.091 ✓	" "
TOTAL		2065.351 ✓	Cu. yds.

✓ W.P.P.
✓ J.W.G.

24" Cast Iron Pipe. Sta: 617+58

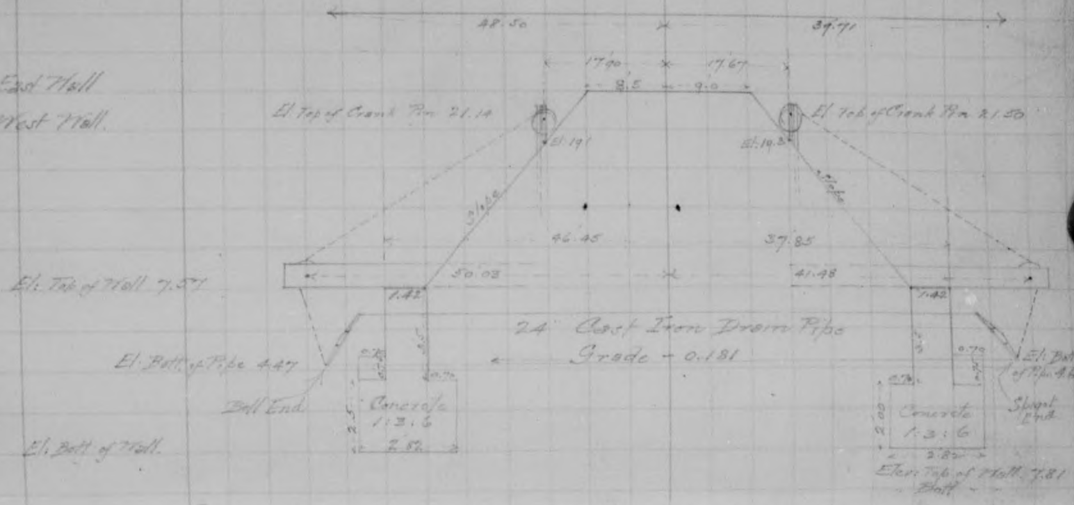
88.21 feet Long

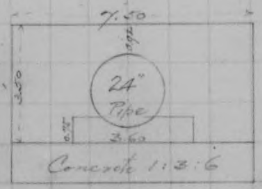
2. Flap Valves.

Flap Valves with Lifting Apparatus

BM 7.620 Bolt on East Wall

BM 7.871 " West Wall





Cement used in Laying Pipe
5/12 Bbl: Anna
1/6 " "K"
1/2 " Gillingham
Cement used on End Walls
8/4 Bbls: "Stand: Portland"

Finished Laying Pipe

Lifting Apparatus by Plan # 7903
End Walls " " # 4568

Finished End Walls. Oct 14/11

Note Pipe put in to satisfy R.W. Conditions

Total Concrete = 6.002 Cu.yds

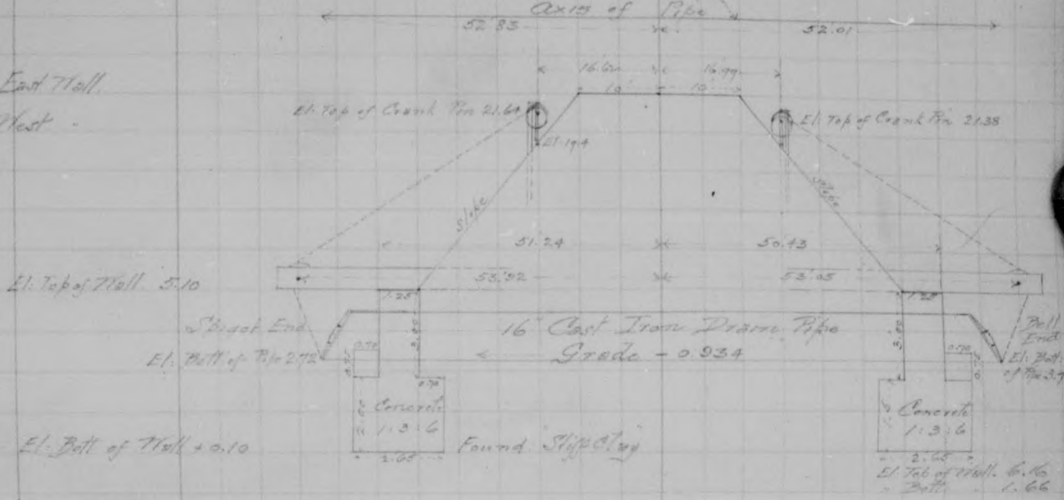
✓W.P.P ✓JWG

16" Cast Iron Pipe. Sta. 627+15

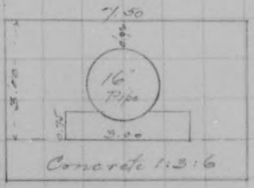
104.84 ft. long. 33 - 3-ft Joints 2. Flap Valves

Flap Valves with Lifting Apparatus

B.M. 5.141 on Bott East Wall.
B.M. 6.205 " West "



Cement used in Laying Pipe
3/8 Bbl. "Anna"
1/2 " "Josson"



Cement used in End Walls
6 3/8 Bbls. "Stand. Portland"

Finished Laying Pipe

Lifting Apparatus by Plan #7903
End Walls " " #

Finished End Walls Nov. 29. 1911.

Note. Pipe put in to satisfy R.W. Conditions

Total Concrete = 4.563 ✓ Cu. yds.

√W.P.P.√JWD

46

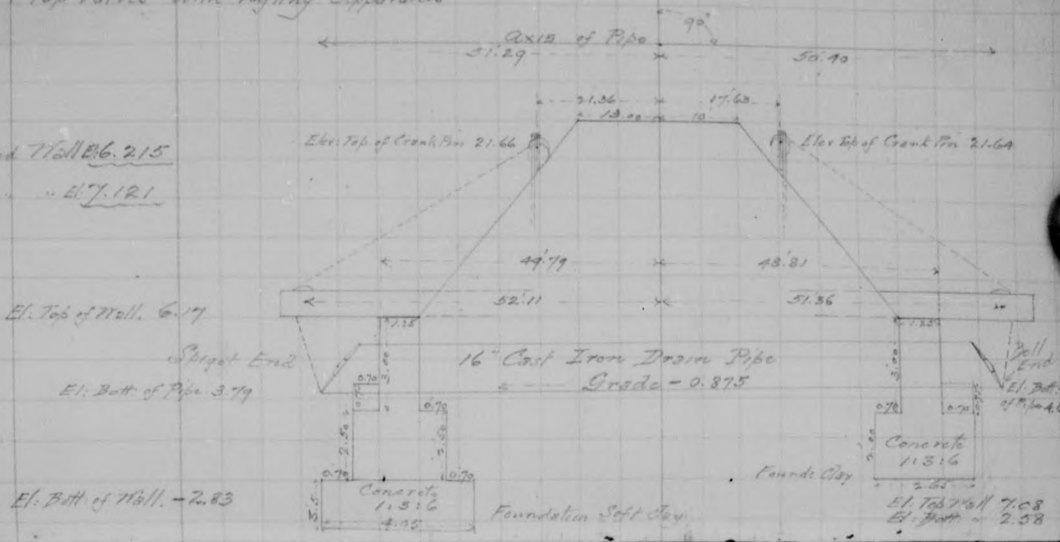
16" Cast Iron Pipe Sta. 637+76

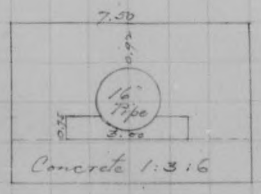
101.69 feet long 32 - 3 ft Joints. 2 Flap Valves

Flap Valves with Lifting Apparatus

BM on Bolt East End Wall El. 6.215

BM. " " West " " El. 7.121





Cement used in laying Pipe
1/8 Bbl. "Gillingham"
1 Bbl. "Jasson"

Cement used in End Walls
10 7/8 Bbls. "Stand. Portland"

Lifting Apparatus by Plan # 7903
End Walls " " #

Finished laying Pipe

Finished End Walls Dec 7/11

Note. Pipe put in to satisfy R.W. Conditions

Total Concrete = 9.237 ✓ Cu. yds.

✓ W. P. F. [illegible]

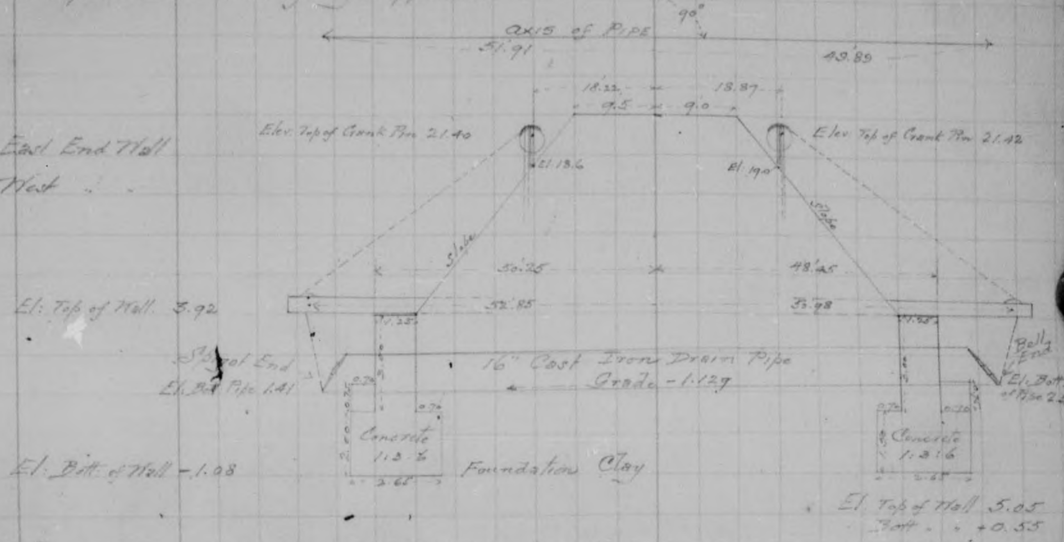
16" Cast Iron Pipe Sta 650+01.5

101.80 ft Long. 30 - 3-ft Joints 2. Flap Valves.

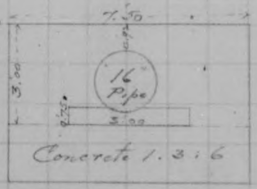
Flap Valves with Lifting Apparatus

BM 3.968 on Bolt East End Wall

BM. 5.113 " West "



Cement used in Laying Pipe
3/8 Bbl: "Anna"
1/2 " "Josson"



Cement used in End Walls
6/8 Bbls: "Stand: Portland"

Lifting Apparatus by Plan #7903
End Walls " " "

Finished Laying Pipe Oct. 19. 1906

Finished End Walls Dec. 12/06

Note. Pipe put in to satisfy R.W. Conditions

Total Concrete = 4.563 Cu. yds. ✓

✓W.P.P.

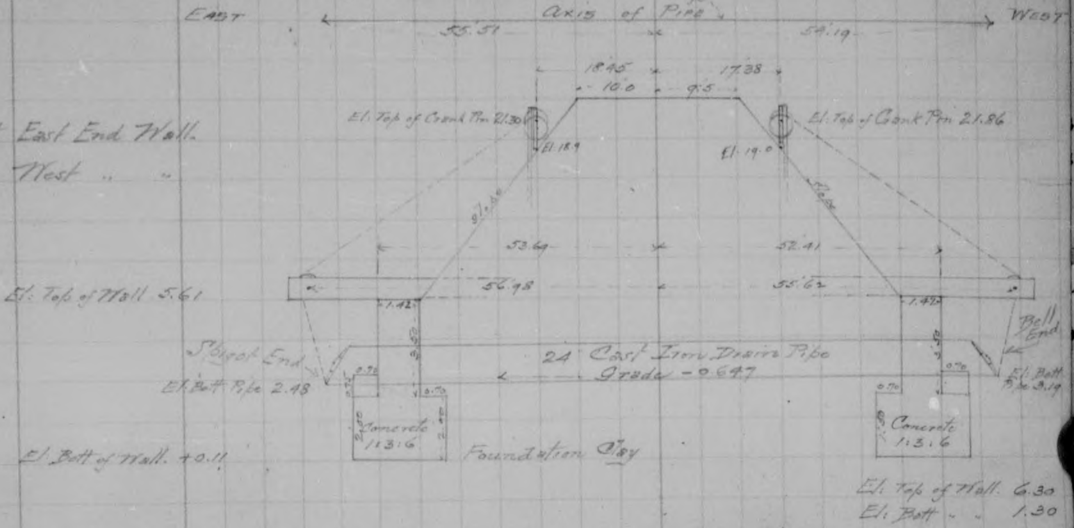
24" Cast Iron Pipe. Sta. 654+52.

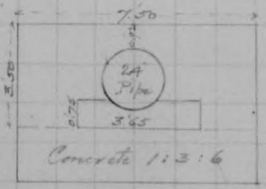
109.70 feet long. 34 - 3-ft Joints. 2 Flap-Valves

Flap Valves with Lifting apparatus.

BM. 5.663 on bolt East End Wall.

BM. 6.364 " " West " "





Cement used in Laying pipe
1/8 Bbl. "Gillingham"
3/4 " "Josson"

Cement in End Walls
7/4 Bbls: "Stand: Portland".

Finished Laying Pipe Dec 20 1906

Finished End Walls. Dec 16, 1911.

Lifting Apparatus by Plan # 7903
End Walls " " # 4568

Note. Pipe put in to satisfy R.W. Conditions.

Total Concrete = 5.221 Cu.yds.

✓ W.P.F.
✓ JWS

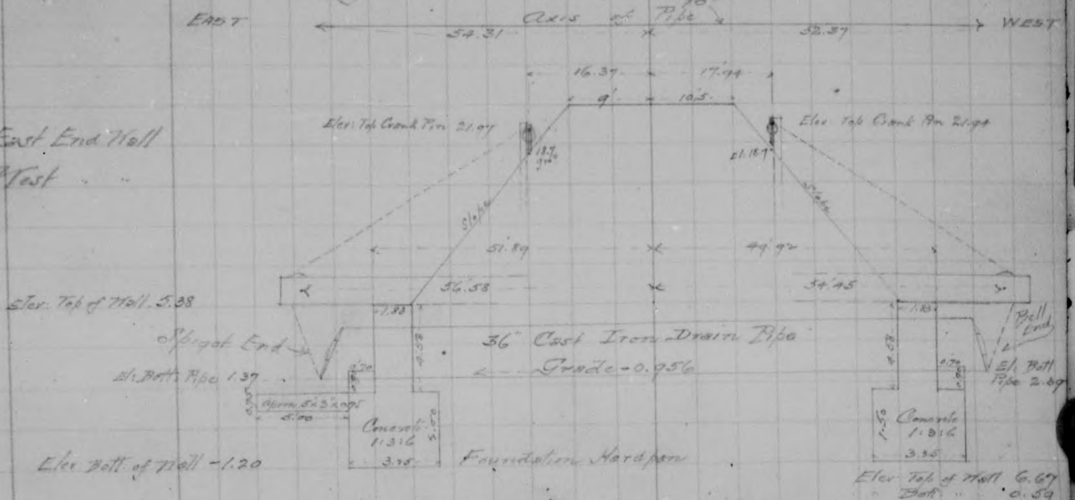
36" Cast Iron Pipe Sta. 659+99

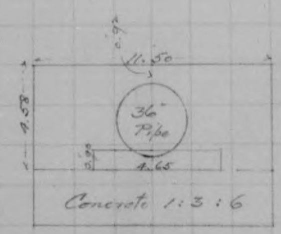
106.68 feet long. 33 - 3-ft Joints. 2 Flap Valves

Flap Valves with Lifting Apparatus

B.M. 5.428 on bolt East End Wall

B.M. 6.713 " West "





Cement used in laying Pipe

1 7/8 Bbls. "Gillingham"

1 1/4 " "Tosson"

Cement used in End Walls

16 5/8 Bbls. "Stand. Portland"

1 bbl. "Condor" Cement used in repairing Pipe.

Finished laying Pipe Dec 22 1906.

Lifting Apparatus by Plan #7903

End Walls " " #4647

Finished End Walls Oct. 12 1911

Note. Pipe to satisfy R.W. Conditions

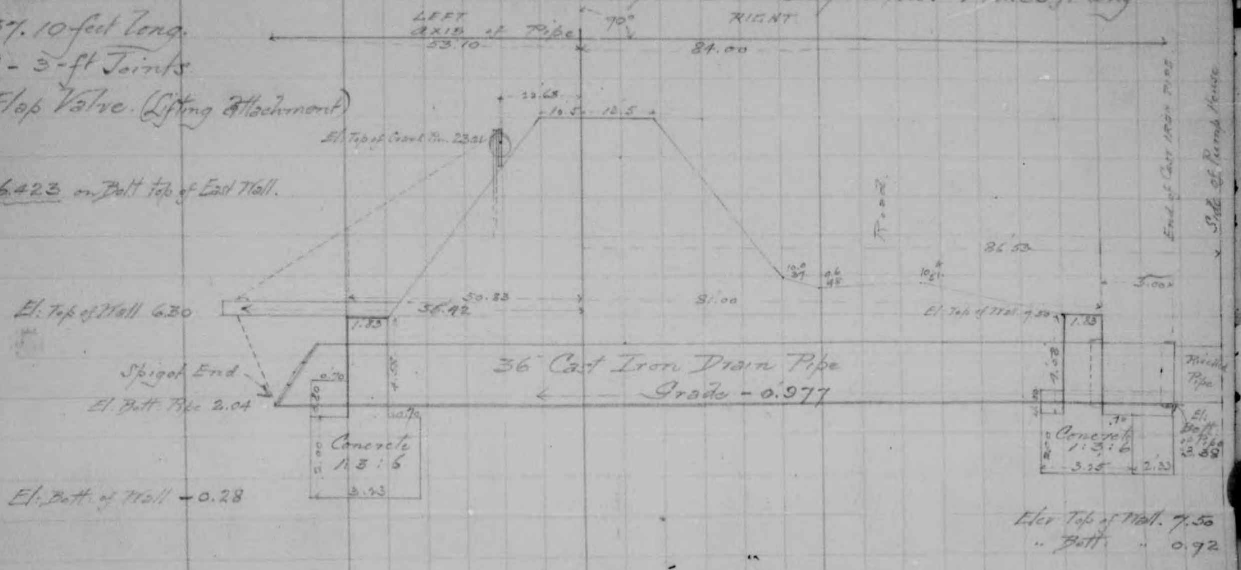
Total Concrete = 11.443 Cu. yds.

✓W.F.P.

36" Cast Iron Pipe Sta: 689+07.2. 142.63 ft long

137.10 feet long.
46 - 3-ft Joints
1. Flap Valve. (Lifting Attachment)

BM. 6.423 on Bolt top of East Wall.



El: Bott of Wall - 0.28

Elev Top of Wall. 7.50
" Bott. " 0.92

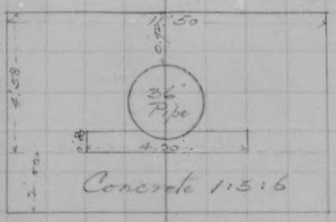
Total Concrete
= 12.737 Cu. yds.

W. P. P. July

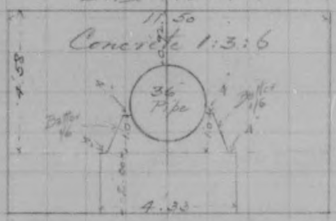
Lifting Apparatus by Plan # 7903
End Walls " " # 4647

Note. Pipe put in to satisfy
R.W. Conditions.

END VIEW. (EAST.)



END VIEW. (WEST.)



Cement used in Laying Pipe
4½ Bbls "Gillingham"

Cement used in End Walls
7½ Bbls "Stand. Port" East Wall

4½ Bbls "K" West Wall.
1 " "C.P.C. Cotton" " "

Finished Laying Pipe
Commenced West Wall. Dec 27/1907
Finished " " Jan 2. 1908
Commenced East Wall. Oct 12. 1911
Finished " Oct 20. 1911.

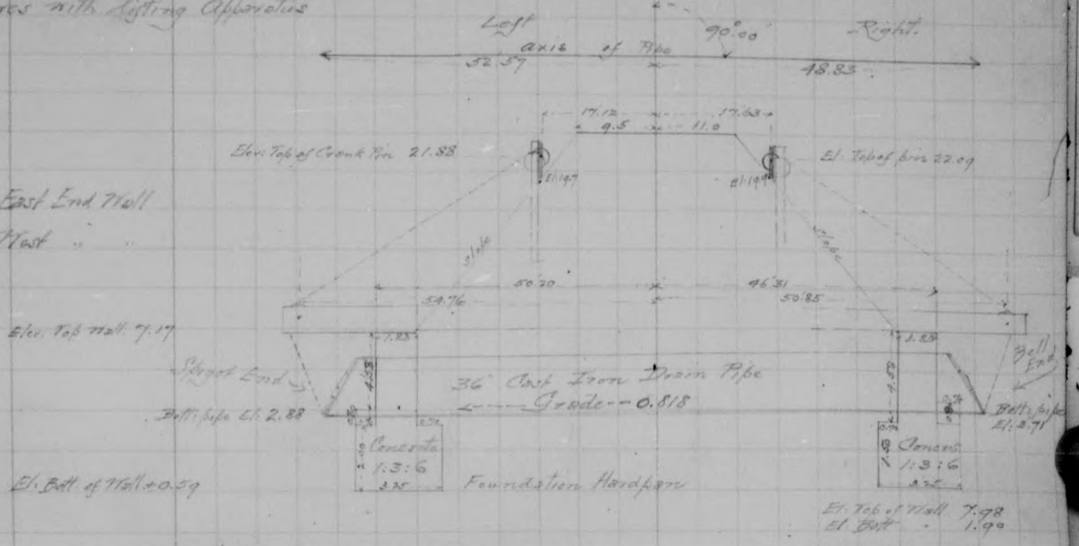
36" Cast Iron Pipe S/2-703+42

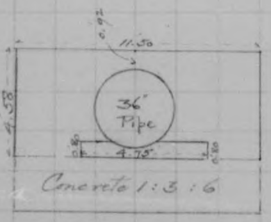
101.40 long 31 - 3-ft Joints. 2. Flap Valves.

Flap Valves with Lifting Apparatus

BM. 7.211 on bolt East End Wall

BM. 8.000 " " West "





Cement used in laying pipe.
3 ½ bbls: "Anna"
3 " "Gillingham"
Cement used in End Walls
15. bbls: "Stand: Portland"

Finished Laying Pipe July 22-1907

Lifting Apparatus by Plan #7903
End Walls " " # 4647

Finished Work on End Walls Oct. 21/11

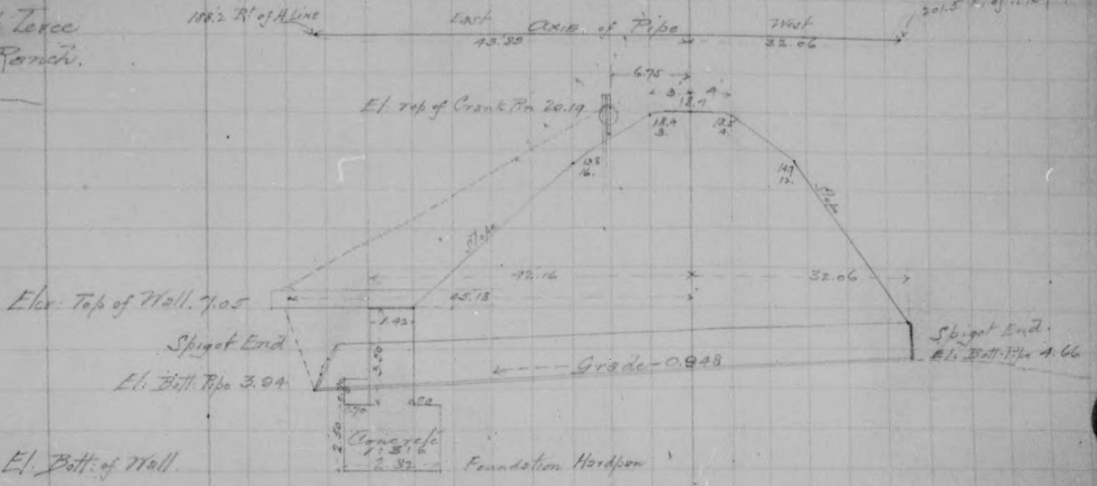
Note. Pipe put in to satisfy R.W. Conditions

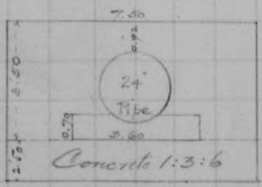
Total Concrete = 11.016 Cu. yds.

W.P.F./J.W.G.

24" Cast Iron, + Vitrified Pipe (24")
opp. Sta. "H" 739+78.5. 201.5' out on Right

Flap Valve with Lifting Apparatus
Pipe thro' Back Levee
Gammon's Ranch.





Cement used in Laying pipe
1¾ Bbls. "Anna"

Cement used in End Wall.
1 Bbl. "K"
3 " C.P.C. Colton

Lifting Apparatus by Plant #7903
End Wall " " #4568

Finished laying pipe

Note. Pipe put in to Satisfy R.W. Conditions

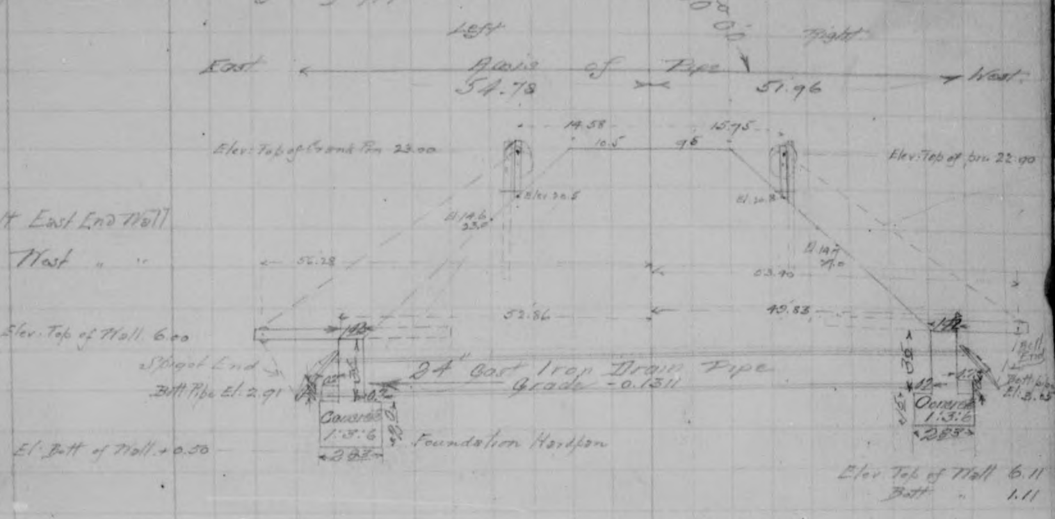
Total Concrete = 3.192 Cu. yds. Finished End Wall.

W. P. P. J.H.G.

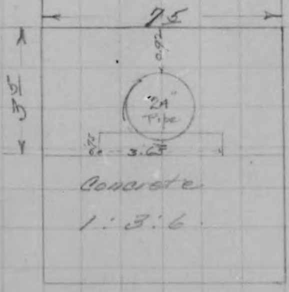
24" dia. Cast Iron Pipe, Sta "D" 777+0.0
106.74 ft. long. 33-3 ft joints, 2 flap valves
Flap Valves with lifting Apparatus

"D" 777+00

BM. 6.028 Top of Bolt East End Wall
BM. 6.128 " " West " "



Lifting apparatus Plan # 7903
End Walls " # 4568



Cement Used in laying Pipe
1½ Bbl. Gillingham.
Proportion

Cement Used in End Walls
7½ Standard Portland

Commenced laying pipes
Dec. 22. 1908.
Finished Dec. 24, 1908

Commenced Work on End Walls
Oct 24/1911
Finished Oct 31st 1911 ✓

Lifting Apparatus by plan # 7903

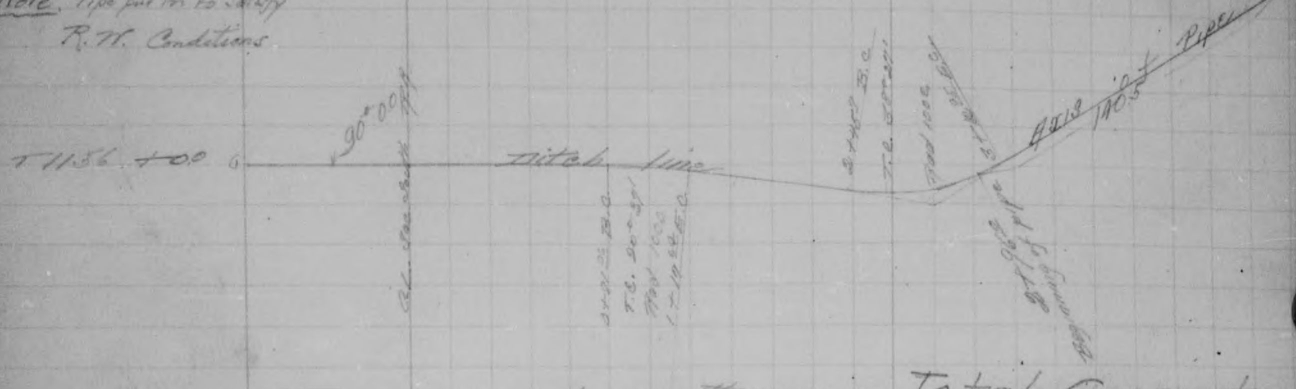
End Walls built by plan # 4568

Note. Pipe put in to satisfy R.W. Conditions Total Concrete = 5.230 Cu. Yds.

W.P.F.

24" dia. Vitrified Pipe throught Locke's lane. ~~140.5 ft long~~, 68-2ft joints, 1-2ft flapvalve, spigot end Flap Valve with lifting Apparatus

Note. Pipe put in to satisfy R.W. Conditions



Lifting Apparatus by plan # 7903
End Wall built by plan # 1568

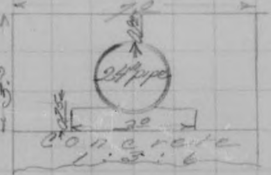
Total Concrete = 3.336 ✓ cu. yds.

W.P.

✓J.W.Y.

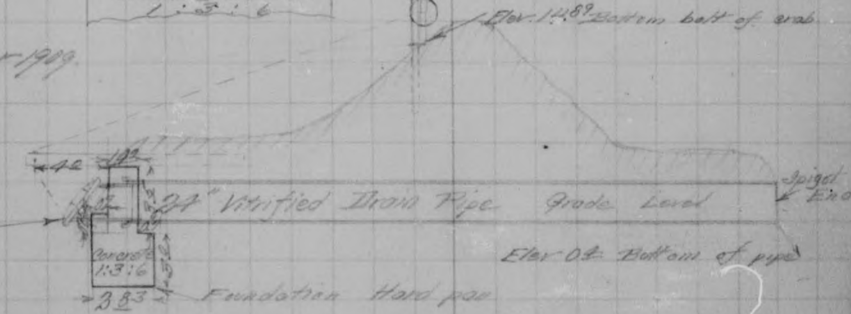
Commenced laying pipe June 5. 1908
Finished June 6. 1908

End Wall built December 1909.



Cement used in laying pipe
3/4 Bbls. K (? see below)
Proportion 1:2

Elev. 3.26 Top of end wall



Elev. 14.89 Bottom bolt of crab
4.2
1.2
24" 2ft cast iron flap valve, Spigot end
24" Vitrified Drain Pipe Grade Level
Spigot End
Concrete
1:3:6
3.8
2.83
Foundation Hard pan
Elev. 0.4 Bottom of pipe

Elev. 3.24 Bottom of end wall

Cement used in End Walls
Cement used in laying pipes

Cement used in End Wall
3 Bbls. K.
2 Bbls. Hammonia

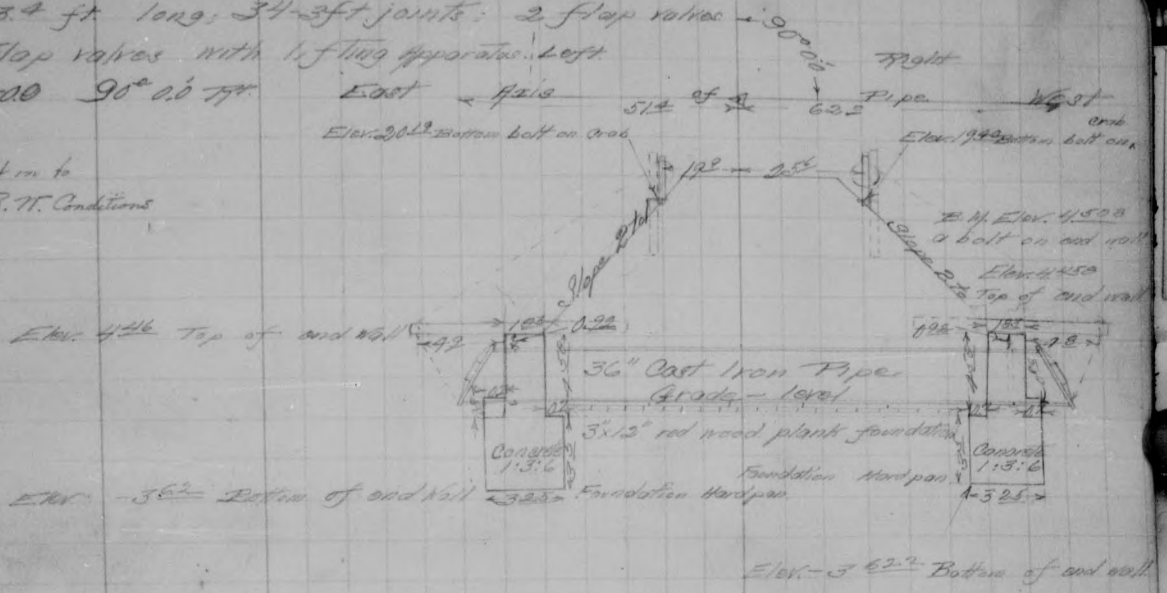
36" Cast Iron Pipe Sta "T" 1156+00 55

113.4 ft. long; 34-3ft joints; 2 flap valves.

Flap valves with lifting apparatus.

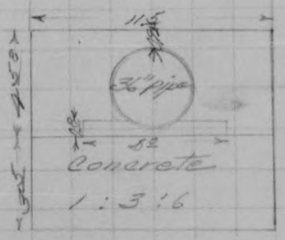
"T" 1156+0.0 90° 0.0' Rt.

Note. Pipe put in to Satisfy R. W. Conditions



Total Concrete
= 15.871 Cu. yds.

W.P.P. JW.G.



Lifting apparatus built by plan # 7903

Lumber equiv. to

100 pcs.	3"x12"x4'	=	1200	B.M.
20 "	3"x12"x20'	=	1200	"
34 "	3"x12"x4'	=	408	"
			2808	B.M.

End Wall built by plan # 4647

Cement used in End Walls 16½ Bbls Standard Portland

Cement used in laying pipes 3⅚ Bbls. K Brand.

Commenced laying pipes June 20, 1908

Finished laying pipes June 25, 1908

Commenced Work on End Walls September 18, 1911.

Finished Work on End Wall. October 5, 1911.

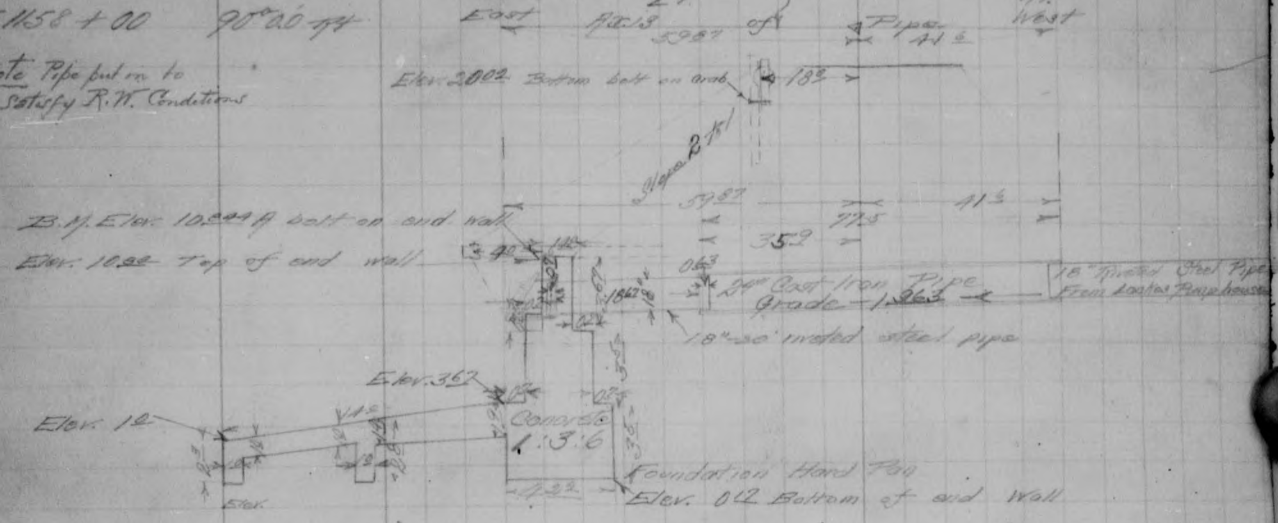
24" dia. Cast Iron Pipe Sta. T 1158 + 00 56

101.92 ft. long 25-3 ft joint, 1-3 ft {Spigot and Flap Valve}

1- 18" 20 riveted steel pipe

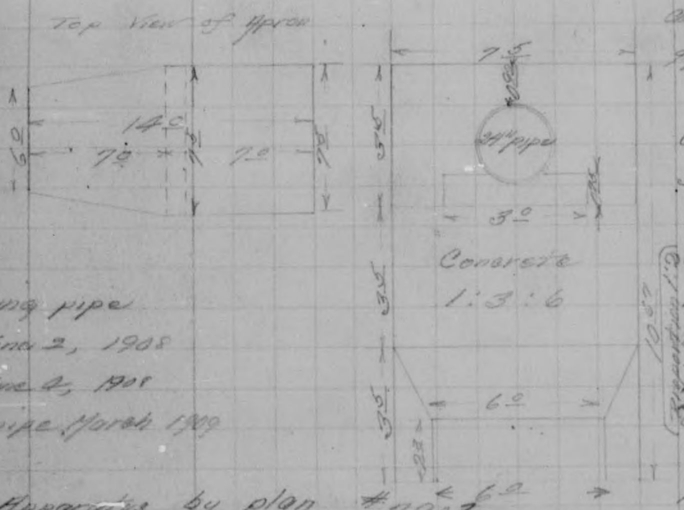
T 1158 + 00 90°00 ft

Note Pipe put in to Satisfy R.W. Conditions


East
Lt
Rt. 13
59.87
90°00
Pipe
41.5
West
Elev. 20.02 Bottom bolt on arab
18.0
Slope 2 to 1
59.87
77.5
41.5
35.9
B.M. Elev. 10.49 bolt on end wall
Elev. 10.92 Top of end wall
0.63
24" Cast Iron Pipe
Grade - 1.363
18" Riveted Steel Pipe From Lacka. Pump house
18" 20 riveted steel pipe
Elev. 3.67
Elev. 1.0
Concrete
1:3:6
Foundation Hard Pan
Elev. 0.12 Bottom of end Wall
Elev.

Total Concrete = 13.707 C.Y.

W.P.P.
✓ 3/21/51



Cement used in end walls
2¾ Bbls. Standard Portland

Cement used in apron
5½ Bbls. Standard Portland

Cement used in laying pipe
laying 24" Cast Iron pipe
1¼ Bbls K Brand
Connecting 18" pipe with 24" pipe
¼ Bbls. Gillingham
¼ Bbls Condor
Connecting 18" pipe with flap valve
1 Bbl K
¼ Bbl Condor

Commenced laying pipe
June 2, 1908
Finished June 4, 1908
Flap Valve on pipe March 1909

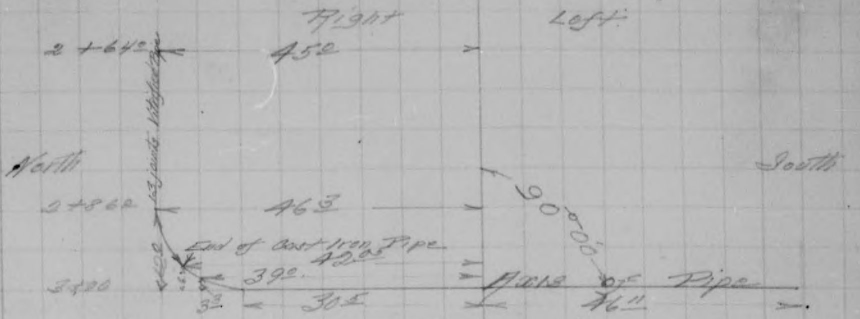
Commenced Work on end walls
September 21, 1911
Finished Work
December 24, 1911

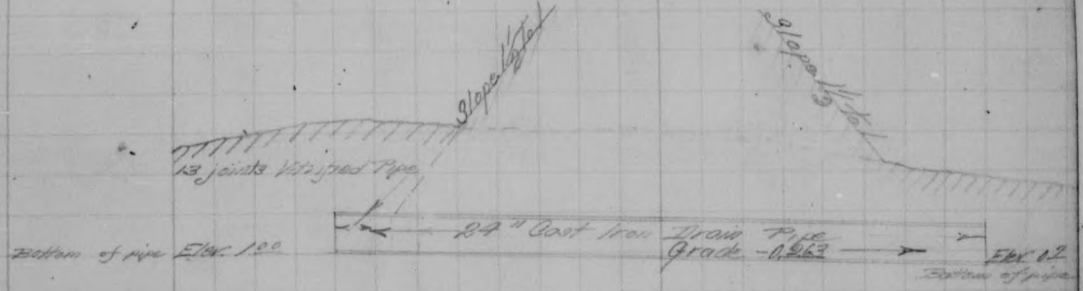
Lifting Apparatus by plan #7903

End Walls built by plan #4568

24 in. Cast Iron Pipe. Sta "L" 3+00
114.16 ft long. 29 - 3ft joints, Cast Iron 88.16 ft long
13 - 2ft joints, Vitrified. 26 ft long.

"L" 3+0.0





Note.
Pipe put in for
Drainage purposes.

Cement Used in laying Pipes
1¼ bbls Standard Portland
Commenced Work
Finished Work

24" dia. Vitrified Drain Pipe Sta T1175+95.0

134.5 ft long. 64 - 2 ft joints.

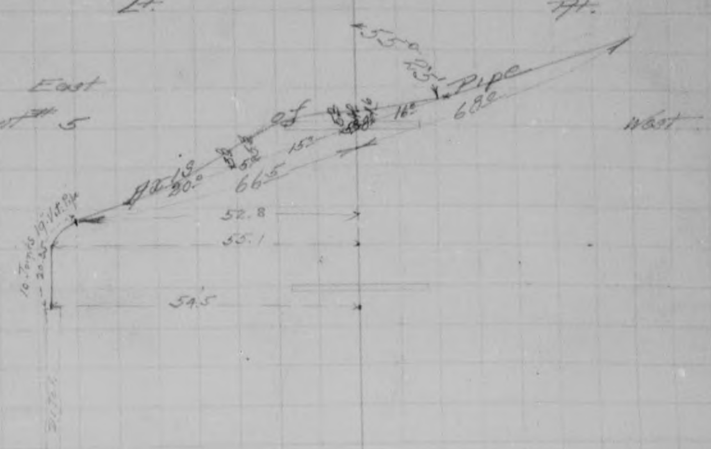
10 Joints 19" Vitrified Pipe
20.35 long.

T1175+95.0 55°25' Rt.

T.1175+59

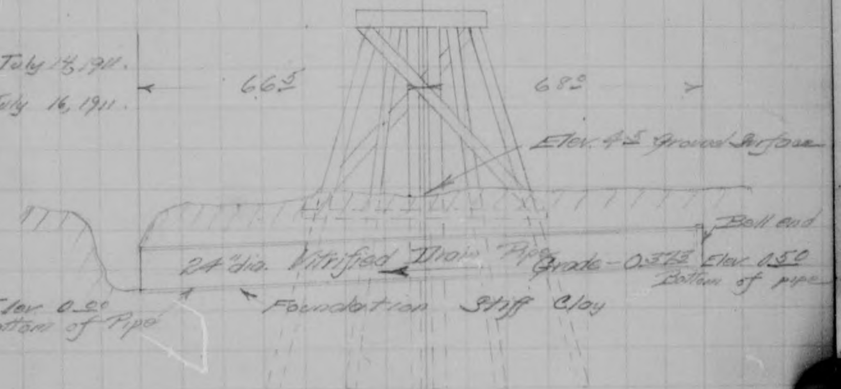
T1175+54.6

T.1175+40.2



Cement used 7/8 Bbl. Standard Portland.
Proportion 1 : 1

Work Commenced. July 14, 1911.
Finished July 16, 1911.



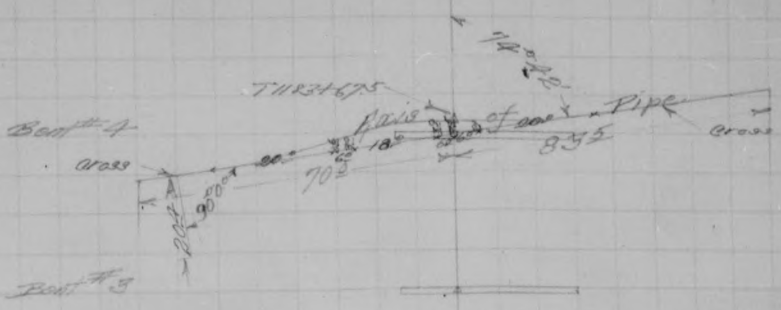
Note Pipe to satisfy
R.W. Conditions

24" dia. Vitrified Drain Pipe Sta. "T" 1183+64.0

153.5 ft long; 71 joints, 2 Crosses Main Pipe.

20.4 ft long: 9 joints, Lateral " .

"T" 1183+64.0 74° 42' Rt

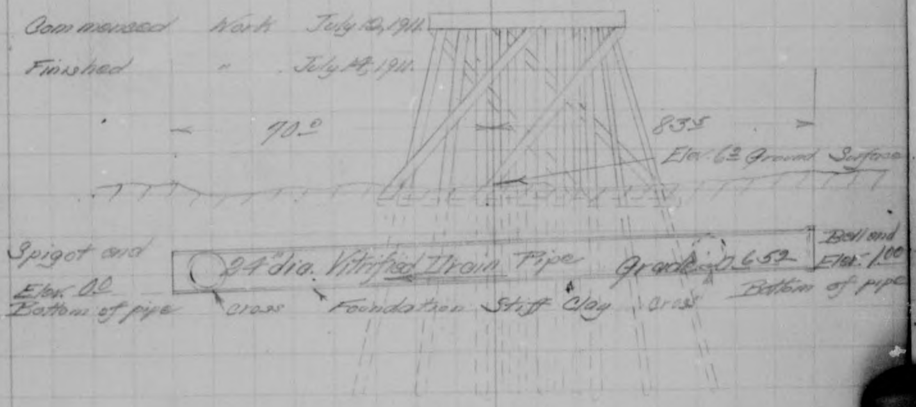


Cement used 2 Bbls. Standard Portland.

Proportion 1:1

Commenced Work July 12, 1911.

Finished " July 14, 1911.

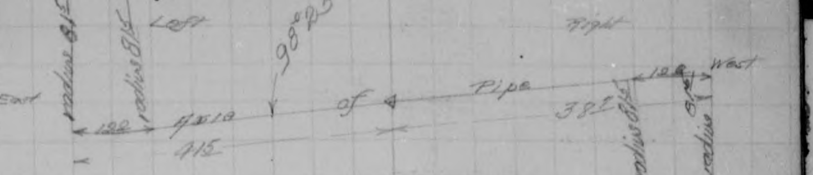


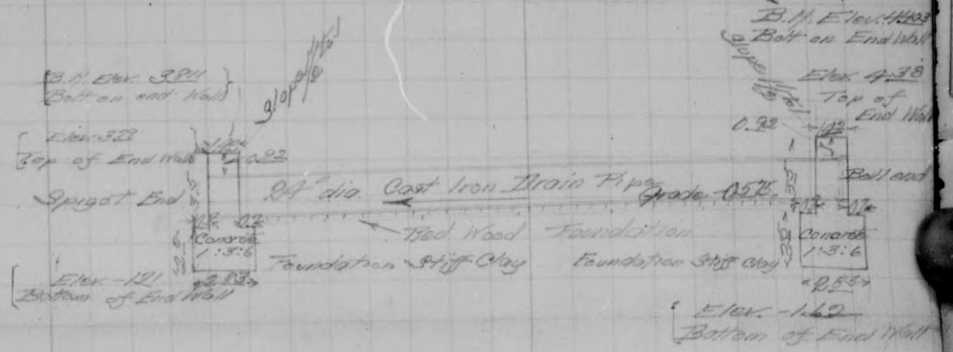
Note. Pipe put in to
Satisfy R.W. Conditions

24" dia. Cast Iron Drain Pipe. Sta." 1187+92.2

802 ft long, 26 - 3 ft joints

Sta." 1187+92.2 98°25' Lt

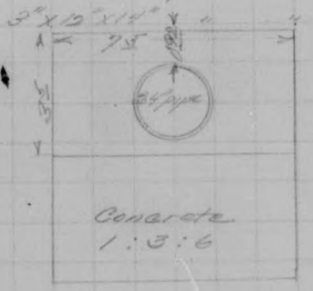




Lumber used for foundation under 24" pipe

24 - 3"x12"x12' Rough Red wood.

9 - 3"x12"x14' " " "



Cement used in End Walls

6 3/4 Bbls. Standard Portland Cement

Cement used in laying pipe

1 1/8 Bbls Hammonia
Hammonia

Note. Pipe put in to Satisfy R.W. Conditions

Commenced Work on End Walls. October 21, 1911.

Finished. October 25, 1911.

End Walls built by plan #4568

Commenced laying pipe June 17, 1910

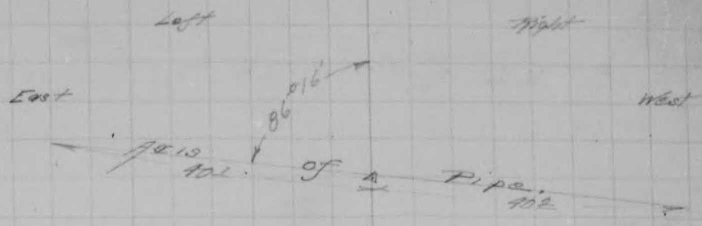
Finished June 18, 1910.

Total Concrete = 5.906 ✓ Cu. yds.

W.P.P. ✓ J.W.B.

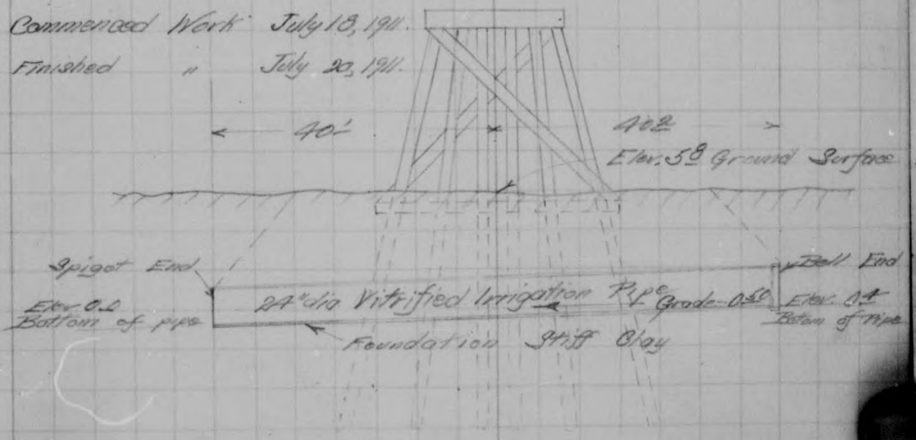
24" dia Vitrified Irrigation Pipe Sta "E" 1420+75.3 62
80.3 ft long; 38 - 2 ft joints

"E" 1420+75.3 86°16' Rt.



Cement used 5/8 Bbl Standard Portland
Proportion 1:1

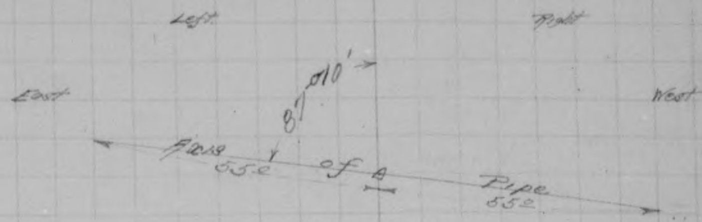
Commenced Work July 18, 1911.
Finished " July 20, 1911.



Note. Pipe put in to Satisfy R.W. Conditions

24" dia. Vitrified Drain Pipe, Sta. "E" 1484 + 50º
110.º ft long; 51 - 2 ft joints ; 1 - 2 ft. T

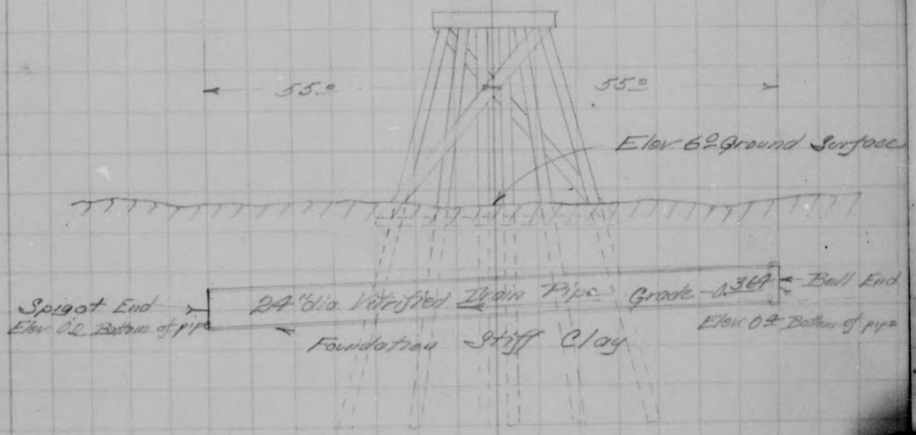
E" 1484 + 50º 87º 10' Lt.



Cement used 7/8 Bbl. Standard
Proportion 1:1

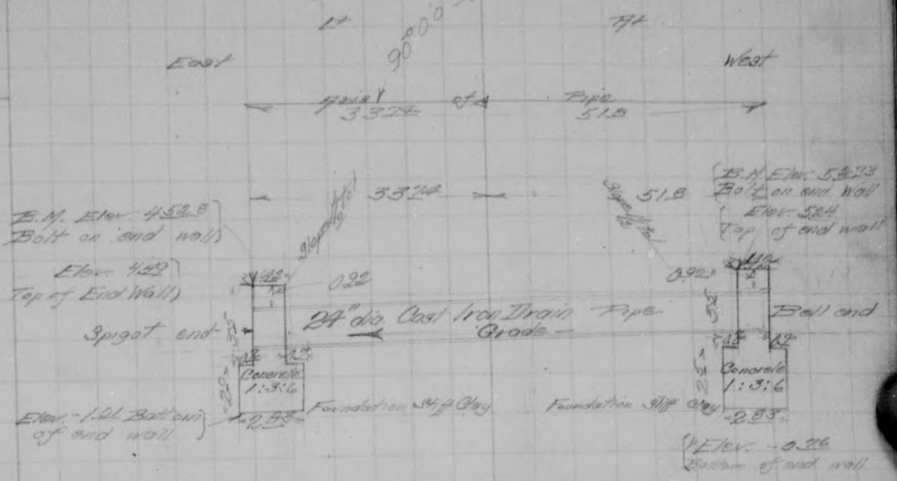
Commenced Work July 9. 1911.
Finished " July 11, 1911.

Note Pipe put in to
Satisfy R.W. Conditions

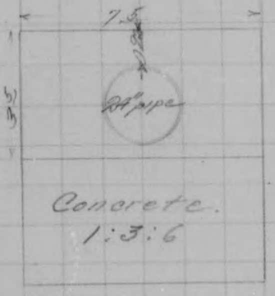


24" dia Cast Iron Drain Pipe Sta "E" 1434+11º
85.54 ft long, 28 - 3 ft joints

E" 1434+11º 90º 0'0" Rt



Note - Pipe put in to Satisfy R.W. Conditions



Cement used in End Walls.
6½ Bbls Standard Portland

Cement used in laying pipes.
1/8 Bbls Havana
Proportion 1:2

Commenced Work on End Walls
October 19, 1911
Finished. October 26, 1911

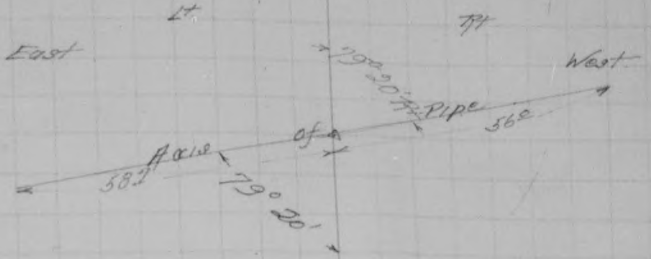
End Walls built by plan #4568

Commenced laying pipes
June 15, 1910
Finished. June 16, 1910.

Total Concrete = 5.906 Cu.yds.
W.P.F. J.W.G.

12" dia. Vitrified Drain Pipe Sta. "E" 1437+89.5
1142 ft. long . 55 - 2 ft. joints.

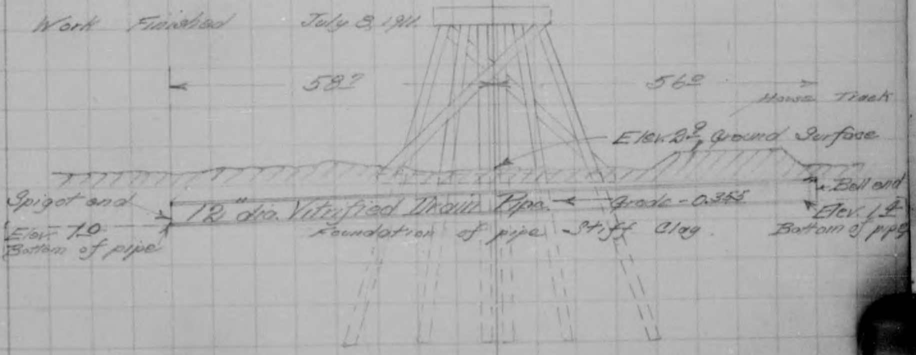
"E" 1437+89.5 79° 20' Rt.



Cement used ⅞ Bbl Standard Portland
Proportion 1:1

Work Commenced July 6, 1911.
Work Finished July 8, 1911.

Note. Pipe put in to
Satisfy R. W. Conditions

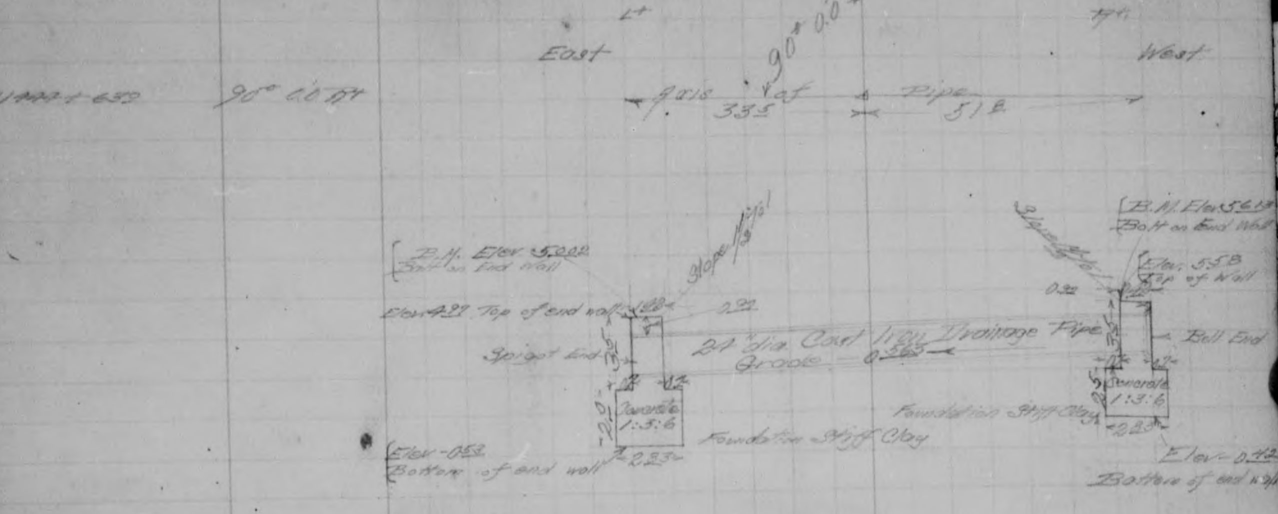


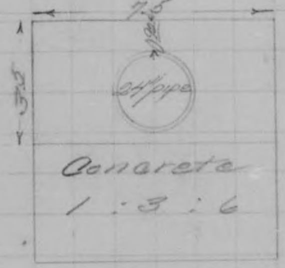
Total Concrete = 5.906 Cu. yds.
W. P. F. ✓ J.W.G.

June 15, 1910.
Finished. June 16, 1910.

24" dia. Cast Iron Drainage Pipe Sta "E" 1444+63.9
853 ft long. 28 - 3 ft. joints

"E" 1444+63.9 90° 00 ft





Cement Used in End Walls
6 1/4 Bbls. Standard Portland

Cement Used in laying Pipe
1 1/8 Bbls. Hamonia.
Proportion 1:2

Note: Pipe put in to Satisfy R.W. Conditions

Commenced Work on End Wall
October 13, 1911.
Finished October 19, 1911.

End ✓ Walls built by plan #4568

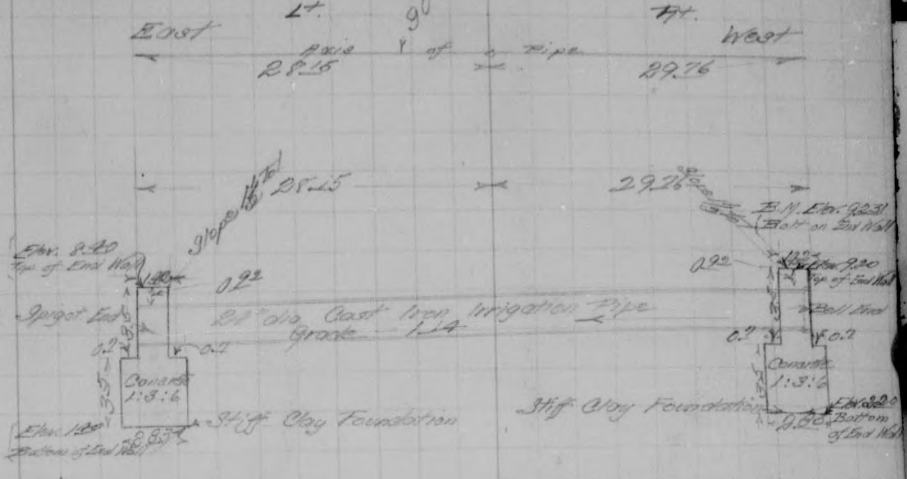
Total Concrete = 5,906 Cu. yds.

Commenced laying pipes.
June 13, 1910
Finished June 14, 1910.

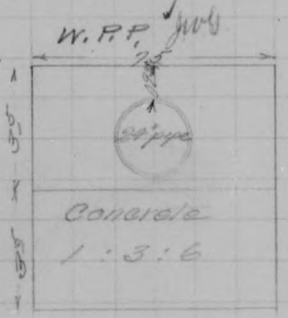
W. P. P. ✓JWG.

24" dia Cast Iron Irrigation Pipe Sta "E" 1450+0.0
57.21 ft long. 19-3 ft joints

"E" 1450+0.0 90° L of R.R.



Total Concrete = 7.871 Cu. yds.



Cement used in End Walls
9 3/8 Bbls Standard

Cement used in laying Pipes
3/4 Bbl. Hamonia
Proportion 1:2

Commenced Work on End Walls
August 17, 1911.
Finished August 23, 1911.

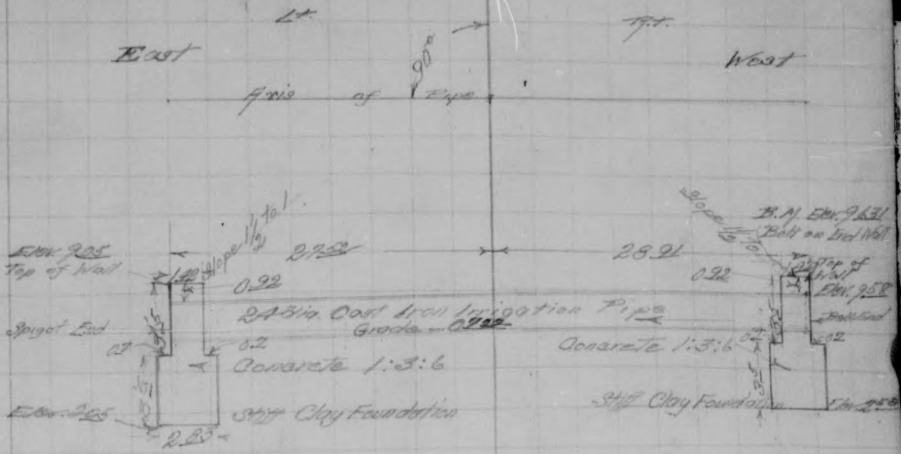
Note. Pipe put in to
Satisfy R.W. Conditions

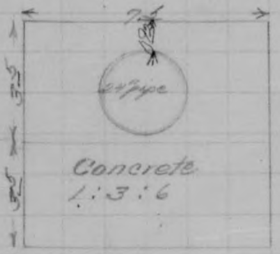
End Walls built by plan # 4568

Commenced laying pipe June 13, 1910
Finished " " June 13, 1910.

24" dia. Cast Iron Irrigation Pipe. Sta. "E°" 1451+00 68
55.43 ft long. 18 _ 3ft joints

"E°" 1451+0.0 90° 0.0 Ft.





Cement used in End Wall.
8 7/8 Bbls. Standard

Cement used in laying Pipe
1 Bbl. Hanover
Proportion 1:2.
Commenced Work on End Wall
Augt 18, 1911.
Finished Augt 24, 1911.
Pipe laid September 1910

Note. Pipe put in to
Satisfy R.W. Conditions

End Walls built by plan # A568

Total Concrete = 7.871 Cu. yds.

W.P.P. Jwb.